High-Level Design

Amazon Sales Data Analysis

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Name - Sri Venkatesh, Yashwanth M, Shashank Prakash Patil
Project - Amazon Sales Data Analysis

Document Version Control

Date Issued	Version	Description	Author
16/11/2022	1.0	Abstract, Introduction, General Description	Sri Venkatesh
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Abstract

Sales analysis is a very important part of any company's growth. Here, we can analyze the sales trend of Amazon monthly, yearly, and product performance-wise. It shows us the growth and withering side of sales of particular products in different countries and also shows the profit of different products particularly.

It helps in taking decisions and problem-solving in the future. It is very for the company's growth. So it is very important to do a sales analysis.

1 Introduction

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
    1. Security
    2. Reliability
    3. Maintainability
    4. Portability
    5. Reusability
    6. Application compatibility
    7. Resource utilization
    8. Serviceability

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.

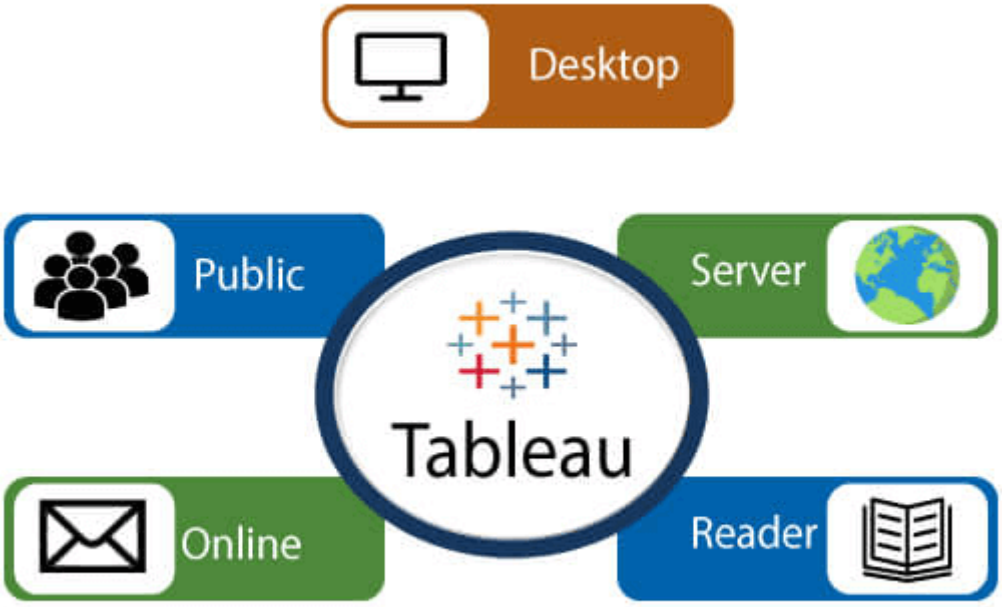
2 General Description

Product Perspective & Problem Statement

The goal of this project is to analyze sales of Amazon for the growth of sales and company, based on profit at particular cities and sales per month and per year that describes the trend of sales. To achieve the goal, we used a data set that is formed by taking into consideration some of the information from 100 records of sales. The problem is based on the given information about the sales trends of Amazon.

Tools used

Tableau helps in building this framework.



3 Design Details

Functional Architecture

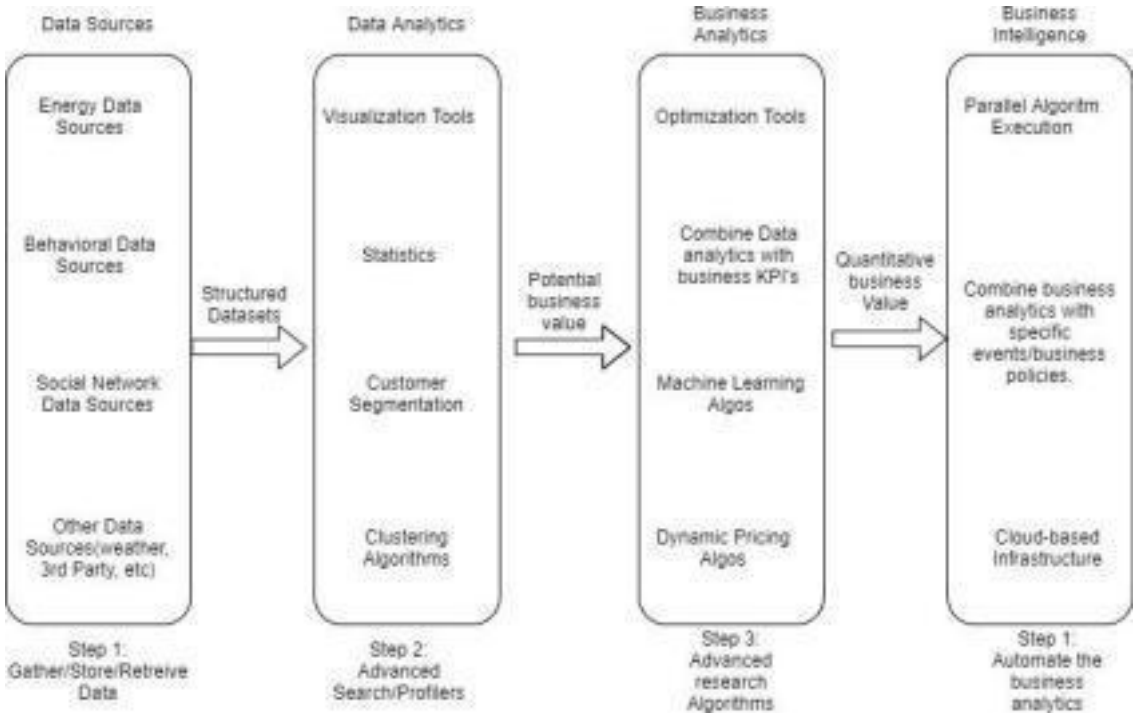
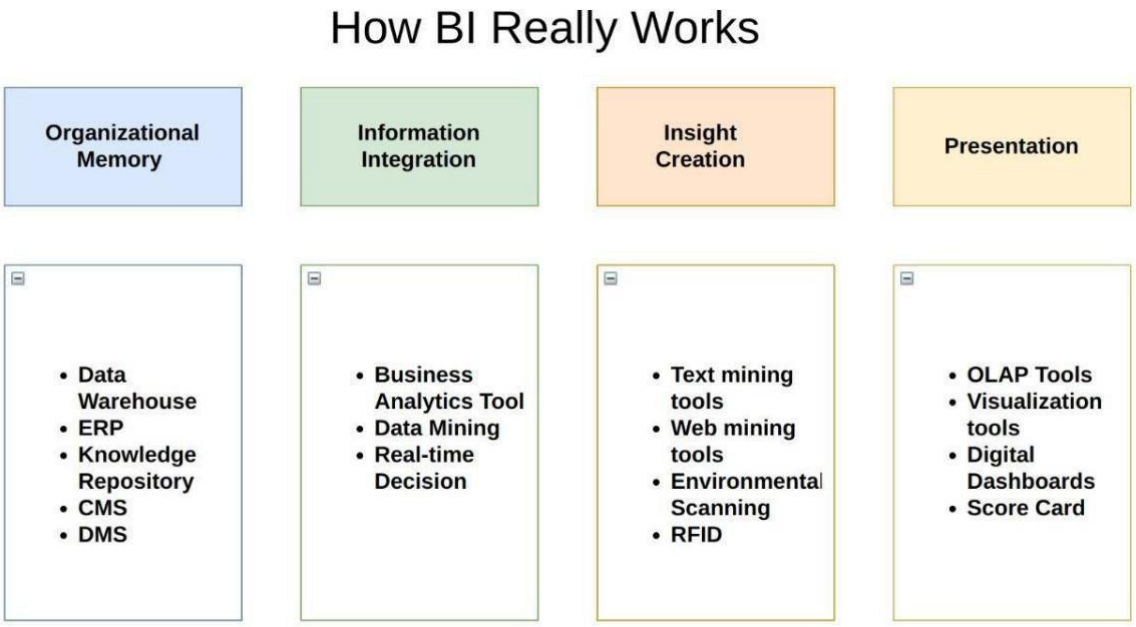


Figure 1: Functional Architecture of Business Intelligence in Tableau



Optimization

Your data strategy drives performance

- Minimize the number of fields
- Minimize the number of records
- Optimize extracts to speed up future queries by materializing calculations, removing columns and the use of accelerated views

Reduce the marks (data points) in your views

- Practice guided analytics. There's no need to fit everything you plan to show in a single view. Compile related views and connect them with action filters to travel from overview to highly-granular views at the speed of thought.
- Remove unneeded dimensions from the detail shelf.
- Explore. Try displaying your data in different types of views.

Limit your filters by number and type

- Reduce the number of filters in use. Excessive filters on a view will create a more complex query, which takes longer to return results. Double-check your filters and remove any that aren't necessary.
- Use an include filter. Exclude filters load the entire domain of a dimension, while include filters do not. An include filter runs much faster than an exclude filter, especially for dimensions with continuous many members.
- Use a continuous date filter. data filters (relative and range-of-date filters) can take advantage of the indexing properties in your database and are faster than discrete date filters.
- Use Boolean or numeric filters. Computers process integers and Booleans (t/f) much faster than strings.
- Use parameters and action filters. These reduce the query load (and work across data sources).

Optimize and materialize your calculations

- Perform calculations in the database
- Reduce the number of nested calculations.
- Reduce the granularity of LOD or table calculations in the view. The
- more granular the calculation, the longer it takes.
    - LODs - Look at the number of unique dimension members in the calculation.
    - Table Calculations - the more marks in the view, the longer
    - it will take to calculate.
- Where possible, use MIN or MAX instead of AVG. AVG requires more processing than MIN or MAX. Often rows will be duplicated and display the same result with MIN, MAX, or AVG

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.

KPIs (Key Performance Indicators)

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

- Impact of cost on sales
- Impact of the country on sales
- impact of the country on profit
- most demanding products on the basis of countries
- least demanding products on the basis of countries

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 Tableau at scale, as well as organizing, orchestrating, and unifying disparate sources of data for business users and experts alike to author and consume content.

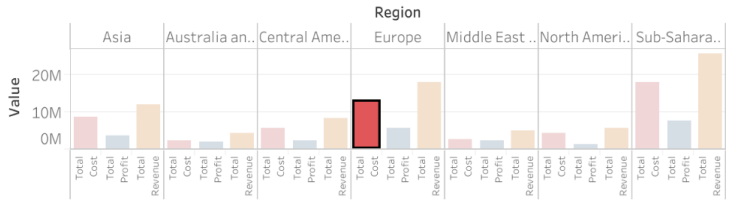
Amazon sales Data Analysis

Total Cost
$12,547,947

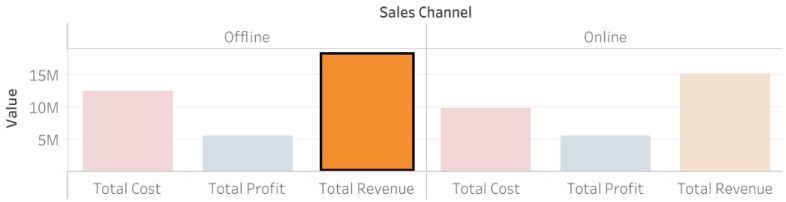
Total Profit
$5,574,540

Units Sold
$52,327

Revenue,sales and Profit RegionWise



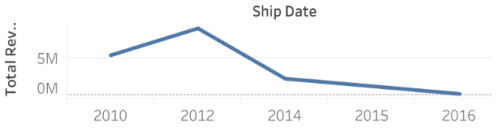
Revenue,cost and profit generated by offline and online source



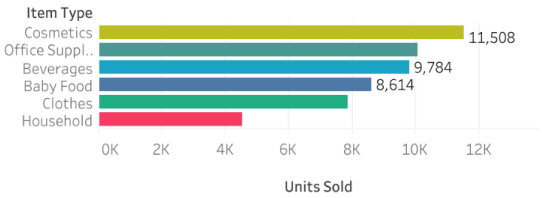
Cost incured from 2010 to 2017

Profit earned from 2010 to 2017

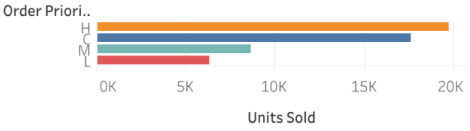
Revenue earned from 2010 to 2017



Units sold based on item types



Order qunatities as per the order priorities



Highest units of item type sold in each region