High Level Document

Amazon Sales and Revenue

Document Version Control :

Date	Version	Description	Author
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Content :

Abstract :

Various types of Sales and Revenue related trends helps its managers in understanding the performance of their company. State-wise Sales and Revenue trend helps in identification of most important markets and markets which need attention to increase company's performance. These trends are needed to take data driven decisions to increase company's sales and revenue.

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 before 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 beingimplemented
- Describe the hardware and softwareinterfaces
- 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 :

Sales management has gained importance to meet increasing competition and the need for improved methods of distribution to reduce cost and to increase profits. The objective of this project is to perform data analysis and visualisation and built

dashboards to provide insights that can help in making data driven decisions to increase sales and revenue of the company.

2.2 Tools used :

Business Intelligence tools and libraries like Numpy, Pandas, Python, Jupyter and Power BI are used to perform data analysis and building the dashboards.

3. Design Details :

3.1 Functional Architecture :

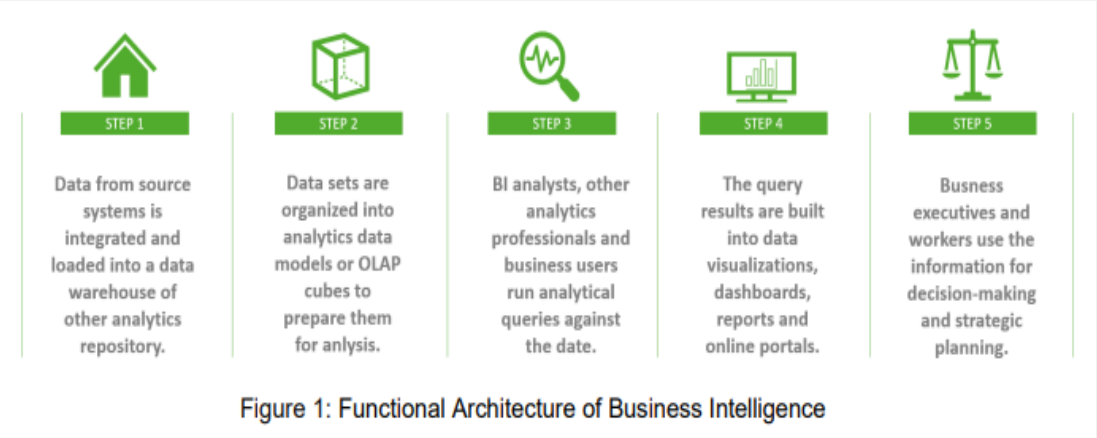
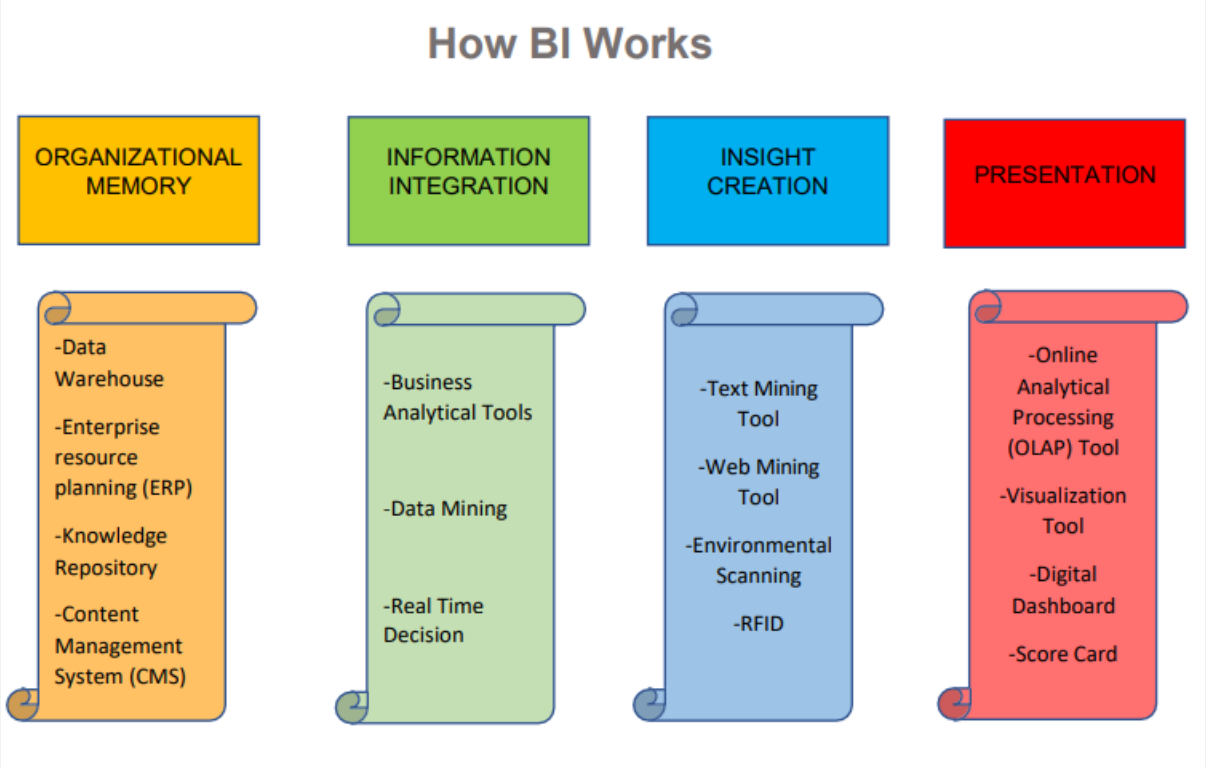


Figure 1: Functional Architecture of Business Intelligence



3.2 Optimization

1. 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

2. Reduce the marks (data points) in your view

- 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.

3. 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 including filters do not. An include filter runs much faster than an exclude filter, especially for dimensions with many members.

- Use a continuous date filter. Continuous date filters (relative and range-of-date filters) can take advantage of the indexing properties in your database and are faster than discrete data 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).

4. 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.
- Make groups with calculations. Like include filters, calculated groups load only named members of the domain, whereas Tableau's group function loads the entire domain.
- Use Booleans or numeric calculations instead of string calculations. Computers can process integers and Booleans (t/f) much faster than strings. Boolean>Int>Float>Date>DateTime>String.

4. KPI :

Dashboards will be implemented to display and indicate certain KPIs and relevant indicators for the Sales and Revenue Trends.

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 Performance Indicators displaying a summary of Sales and Revenue and their relationship with different metrics.

For Sales :

- Sales by State
- Sales % by City
- Category-wise Product's Sold (in %)
- Monthly trend of Sales

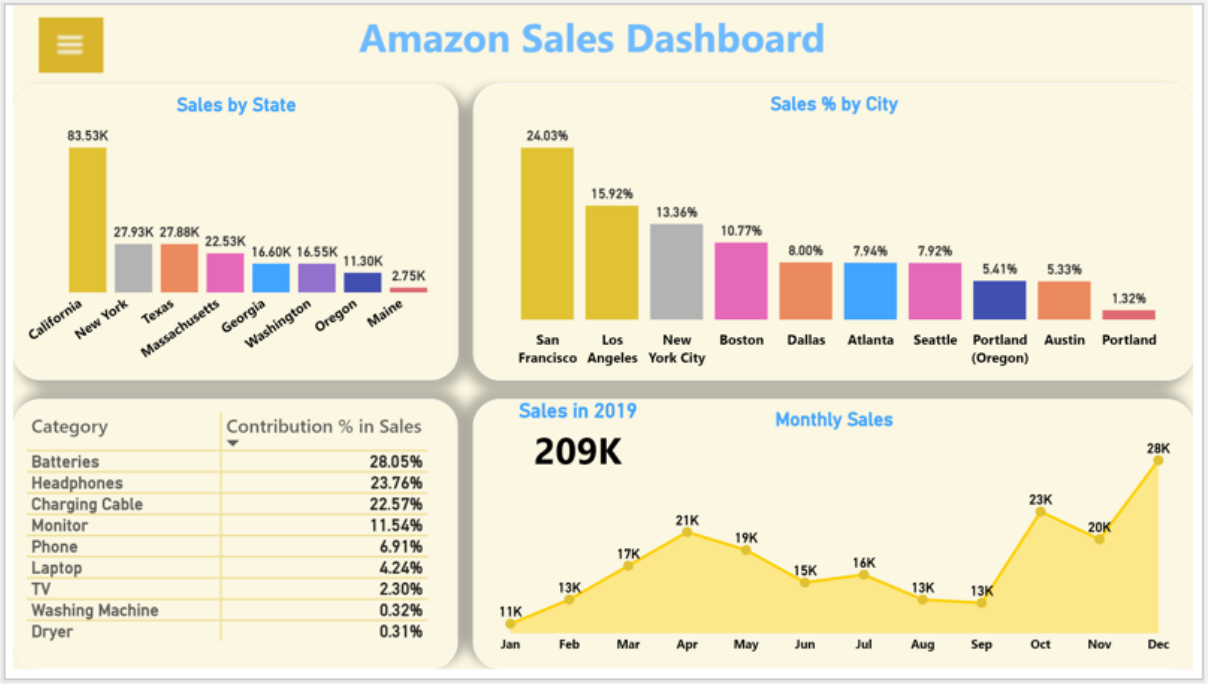
For Revenue :

- Revenue generation per State
- Distribution of Revenue (in %) by Cities
- Product's Revenue(in %) in various Product Categories
- Month-wise Revenue trend

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

Power BI prioritizes choice in flexibility to fit, rather than dictate, your enterprise architecture. Power BI Desktop and Power BI Service leverage your existing technology investments and integrate them into your IT infrastructure to provide a self-service, modern analytics platform for your users. With on-premises, cloud, and hosted options, there is a version of Power BI to match your requirements.


Amazon Sales Dashboard
Sales by State
83.53K
27.93K
27.88K
22.53K
16.60K
16.55K
11.30K
2.75K
California
New York
Texas
Massachusetts
Georgia
Washington
Oregon
Maine
Sales % by City
24.03%
15.92%
13.36%
10.77%
8.00%
7.94%
7.92%
5.41%
5.33%
1.32%
San Francisco
Los Angeles
New York City
Boston
Dallas
Atlanta
Seattle
Portland (Oregon)
Austin
Portland
Category
Contribution % in Sales
Batteries 28.05%
Headphones 23.76%
Charging Cable 22.57%
Monitor 11.54%
Phone 6.91%
Laptop 4.24%
TV 2.30%
Washing Machine 0.32%
Dryer 0.31%
Sales in 2019
209K
Monthly Sales
11K
13K
17K
21K
19K
15K
16K
13K
13K
23K
20K
28K
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Amazon Revenue Dashboard
Revenue by State
$13.7M
$4.7M
$4.6M
$3.7M
$2.8M
$2.7M
$1.9M
$0.4M
California
New York
Texas
Massachuse...
Georgia
Washington
Oregon
Maine
Revenue % by City
23.95%
15.81%
13.52%
10.62%
8.10%
8.02%
7.97%
5.42%
5.28%
1.30%
San Francisco
Los Angeles
New York City
Boston
Atlanta
Dallas
Seattle
Portland (Oregon)
Austin
Portland
Category
Contribution % in Revenue
Laptop 35.28%
Phone 25.92%
Monitor 18.49%
Headphones 11.43%
TV 4.19%
Charging Cable 1.84%
Washing Machine 1.16%
Dryer 1.12%
Batteries 0.58%
Revenue in 2019
$34.49M
Monthly Revenue
$1.8M
$2.2M
$2.8M
$3.4M
$3.2M
$2.6M
$2.6M
$2.2M
$2.1M
$3.7M
$3.2M
$4.6M
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec