

High Level Design (HLD)

AMAZON SALES DATA ANALYSIS

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Abstract:

In the realm of E-commerce, organizations diligently strive to establish their core competencies by developing and maintaining a distinctive process for gathering personal information about customers as well as their purchasing habits. This report aims to provide a critical evaluation of how Amazon, a service-based organization, effectively employs Management Information Systems (MIS) as a powerful tool to gain a competitive advantage through efficient information management and acquisition. In today's market, effective sales management plays a pivotal role in predicting business performance and future prospects. Companies that successfully implement robust sales management systems have showcased notable growth and are strategically positioned to concentrate on key products and customer segments, ultimately resulting in enhanced customer retention, enticing offers, and minimized losses. In light of the escalating market competition posed by emerging companies with superior management systems, adopting effective sales management practices becomes imperative in order to maintain competitiveness.

1 Introduction:

1.1 Why this High-Level Design Document?

The primary objective of the High-Level Design (HLD) document is to augment the existing project description by providing essential details that will serve as a robust model for the coding process. This comprehensive document aims to identify and address potential contradictions in the early stages, before the actual coding commences. Moreover, it serves as a valuable reference manual, outlining the high-level interactions among modules within the system. By adopting a professional approach to this document, we ensure a well-structured and coherent foundation for the development phase.

The High-Level Design (HLD) document shall encompass the following key elements, meticulously presenting each design aspect with comprehensive detailing:

- **Description of User Interface:** A thorough depiction of the user interface being implemented, highlighting its functionality and user interaction.
- **Hardware and Software Interfaces:** Clear delineation of the interfaces between hardware components and software modules, elucidating how they interact with each other.
- **Performance Requirements:** Explicit definition of the performance criteria and expectations, outlining the system's responsiveness, throughput, and efficiency benchmarks.
- **Design Features and Architecture:** An in-depth portrayal of design features and the overall architecture of the project, elucidating the organization and relationships of its components.

Non-Functional Attributes: Comprehensive descriptions of various non-functional attributes, such as:

- Security:
- Reliability:
- Maintainability:
- Portability:
- Reusability:
- Application
- Resource Utilization:
- Serviceability:

By addressing these aspects in the HLD, we lay the groundwork for a robust and well-structured system that fulfills its objectives while adhering to high-quality standards.

1.2 Scope:

The HLD document describes the system's design components, such as the database architecture, the application architecture (layers), the application flow (Navigation), and the technology architecture¹. The HLD employs terms that range from non-technical to moderately technical, which the system's administrators can comprehend.

2 General Description:

2.1 Product Perspective & Problem Statement

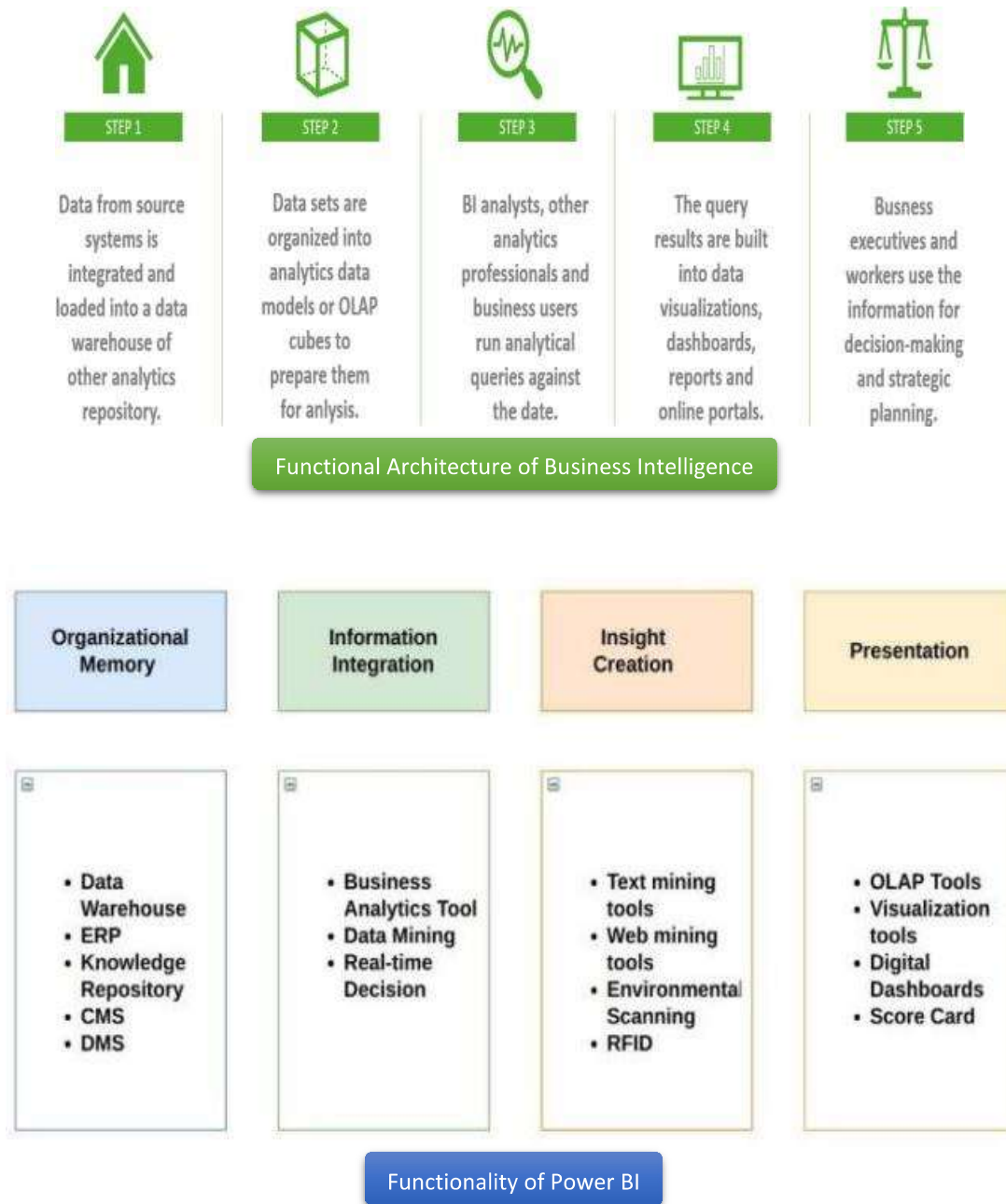
The project's objective is to examine Amazon sales data from 2017 to 2019 and gain deeper insights into the products that are in high demand, the products that are generating high profits, the products that have low demand or are not bought by the customers, and the amount of inventory that we need to keep for the future sales, etc.

2.2 Tools Used



3 Design Details:

3.1 Functional Architecture



3.2 Optimization

Use data strategy to improve performance:

- Reduce fields and records
- Optimize extracts with calculations, columns removal and accelerated views

Reduce marks in your view:

- Use guided analytics with action filter
- Remove unnecessary dimensions from detail shelf
- Try different types of views

Limit filters by number and type:

- Remove excessive filters
- Use include, continuous, Boolean or numeric filters
- Use parameters and action filters

Optimize and materialize your calculations:

- Perform calculations in database
- Reduce nested, LOD or table calculations
- Use MIN or MAX instead of AVG
- Make groups with calculations
- Use Boolean or numeric calculation instead of string calculations

4 KPI & Charts

4.1 Key Performance Indicators (KPIs)

A KPI, or a key performance indicator, is a quantifiable measure of how well an organization or a specific activity is achieving its goals or objectives. KPIs help organizations track their progress, identify strengths and weaknesses, and make data-driven decisions.

4.2 Charts

A chart is a graphical representation of data, such as a line chart, a bar chart, or a pie chart. Charts help to visualize data in an easy-to-understand way, and to reveal patterns, trends, and relationships that might not be obvious from numbers alone. Charts can also be used to display KPIs and compare them with targets or benchmarks.

KPIs and charts can help you to analyze the data by showing you how your performance is changing over time, how you are doing compared to your goals or competitors, and what factors are influencing your results. By analyzing the data with KPIs and charts, you can gain insights into what is working well and what needs improvement, and take actions to optimize your performance.

5 Deployment

Data and analytics are essential for your company's success. You already have data and some analytical capabilities to solve business problems, gain competitive advantages, and drive enterprise transformation. But with the increasing volume and variety of enterprise data, database technologies, and analytical skills, you need to empower your users with self-service analytics by deploying and operating Power BI at scale, and by integrating, orchestrating, and unifying disparate data sources for content creation and consumption. Power BI offers choice and flexibility to align with 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, you can find a Power BI solution that meets your needs.

AMAZON SALES DATA ANALYSIS

Year

All

9,43,61,462.45

Total Sales

5,60,775

Quantity

4,15,93,156.98

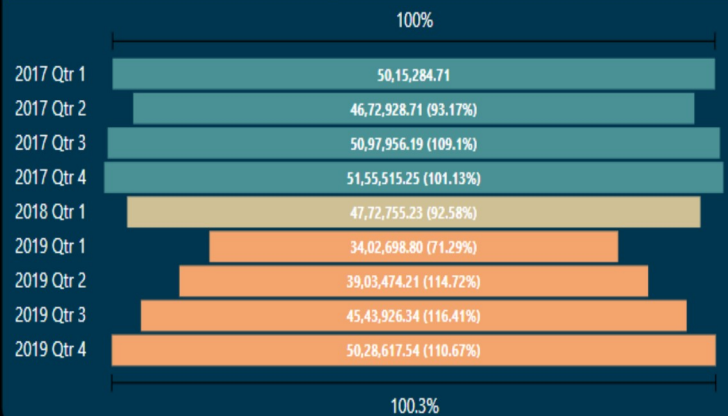
Profits

Item	Quantity	Sales Price	Sales Amount	Profits	Profit %
Colony Muffins	4	329.03	658.05	658.05	Inf
Excellent Cranberry Juice	400	9.77	976.62	824.62	54
Big Time Lemon Popsicles	150	36.85	1,105.54	927.84	52
High Top Firm Tofu	4,341	787.19	48,401.11	40,080.42	48
Landslide Oregano	249	4,390.32	20,094.14	15,960.74	38
Cutting Edge Turkey Hot Dogs	250	4,038.55	21,952.08	17,355.88	37
Jumbo Small Eggs	687	6,666.46	45,478.65	35,826.30	37
Club 1% Milk	120	16.58	995.03	767.03	33
American Pimento Loaf	180	31,901.24	48,739.53	37,537.93	33
Super Vegetable Oil	577	9,766.03	50,049.79	38,175.58	32
BBB Best Apple Jam	48	92.34	1,108.06	837.34	30
Great Muffins	4,236	2,372.12	73,866.14	54,931.22	29
Super Apple Jelly	187	4,218.81	16,092.79	11,963.83	28
Washington Diet Cola	394	897.50	10,926.01	8,106.40	28
Landslide Creamy Peanut Butter	157	6,566.99	19,612.09	14,281.42	26

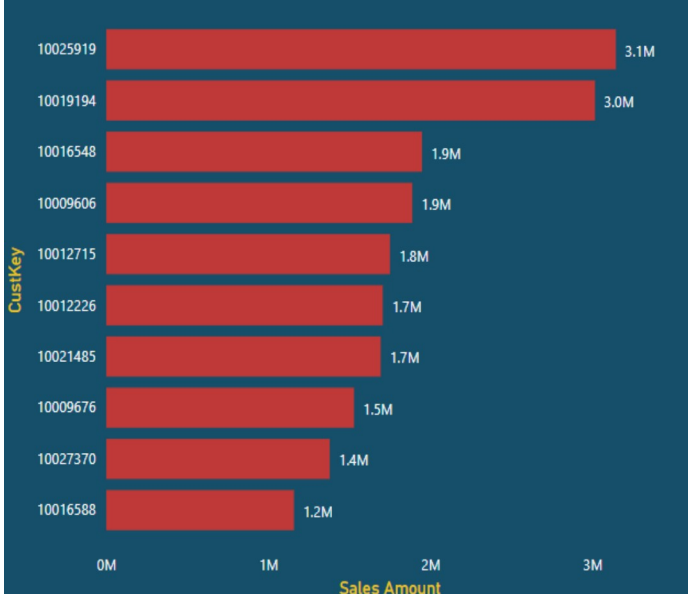
Sales Amount, %GT Sales Amount and Profits by Year, Quarter and Month



Profits by Year and Quarter



Top 10 CustKey by Sales



Top 10 CustKey by Profits

