# High-Level Design (HLD) Document

Project Title: Amazon Sales Data Analysis

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## Document Version Control

| Date | Version | Description | Author |
|---|---|---|---|
| 2025-06-26 | 1.0 | First version of Amazon HLD | Divyanshi Gangrade |


## Abstract

Amazon sales performance is a critical measure of its global retail operations. This project analyzes historical Amazon sales data from 2010 to 2017 to identify trends, top-performing categories, and insights across products, sales channels, and geographies. Using Power BI, the dashboard visualizes key metrics like revenue, profit, cost, and units sold to assist decision-making and performance monitoring.


## 1. Introduction

### 1.1 Why this High-Level Design Document?

This High-Level Design (HLD) document provides an overview of the data model, visualization plan, tools used, KPIs tracked, and architectural flow of the Amazon Sales Analysis project. It ensures a structured approach to building the dashboard and serves as a reference for design and implementation decisions.

### 1.2 Scope

- Data visualization of Amazon sales data from 2010–2017
- KPIs such as Total Revenue, Profit, Cost, Units Sold
- Insights by Year, Month, Channel, Product Type, Region, and Country
- Dashboard deployment using Power BI Desktop

## 2. General Description

### 2.1 Product Perspective & Problem Statement

Retail businesses need visibility into sales trends and profitability across time and regions. The goal is to transform raw transactional data into business insights using interactive dashboards.

This project focuses on:
- Exploring trends in sales performance
- Highlighting high-profit products and regions
- Comparing online vs offline channel effectiveness

### 2.2 Tools Used

| Tool | Purpose |
|---|---|
| Power BI | Data modeling and visualization |
| DAX | Calculated columns and measures |
| Excel | Source data format |
| GitHub | Documentation and file storage |

## 3. Design Details

### 3.1 Functional Architecture

Excel (.csv) File
↓
Power BI (Power Query) → Data Cleaning & Transformation
↓
DAX Measures & Relationships
↓
Power BI Visual Layer
↓
Interactive Dashboard (Filters, Charts, KPIs)

### 3.2 Optimization

- Removed unnecessary columns
- Minimized filters in visuals
- Used numeric filters where possible
- Created summary tables (e.g., Top 10 Countries)
- Display Units set to Millions (M) and Thousands (K)
- Optimized slicers (Year and Month)

## 4. KPIs

### 4.1 Key Performance Indicators (Displayed via KPI Cards)

| KPI Name | Description |
|---|---|
| Total Revenue | Total income generated from sales |
| Total Profit | Net earnings after cost deductions |
| Total Cost | Total operational and product costs |
| Units Sold | Total quantity of products sold |

## 5. Deployment

The Power BI `.pbix` file can be shared via:
- Power BI Desktop (local)
- Power BI Service (organization publishing)
- Export as PDF/PNG for reporting
- GitHub for open access documentation

Optionally, the report can be embedded in a website or portfolio for public demonstration.