AMAZON SALES ANALYSIS

ARCHITECTURE DESIGN

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Abstract

Amazon Sales data refers to sales, high performing sellers, and several other data points. There are millions of Amazon sellers around the world. Amazon sales data Analysis focuses on the process of analyzing consumer behavior, sales, and several other attributes to make improved, data-driven decisions. It is key to successfully sustaining their businesses and earning profits and for this purpose, they analyze different metrics like Total Sales, Sales Quantity, Total Profit, Sales, Last Year Sales, and other metrics.

By analyzing these different metrics, we will be able to increase and improve our performance. It can also help us to better understand the market trends and customers' buying behaviors and help us to know what the customers really want.

In the world of rising new technology and innovation, E-commerce industry is advancing with the role of Data Analytics. Data analysis can help them to understand their business in a quiet different manner and helps to improve the

quality of the service by identifying the weak areas of the business. This study demonstrates the how different analysis help to make better business decisions and help analyze customer trends and satisfaction, which can lead to new and better products and services. Different analysis performed to get the key insights from this data based on which business decisions will be taken.

This dataset provides a huge amount of information about the Profit, Revenue, Cost, Unit Sold and other information Across Various Region and Country.

Based on the Information the ultimate- goal is to showcase the Sales trendmonth wise, year wise and Quarter wise and find important insights highlighting key indicators and metrics that influence customer choice

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1. Introduction

1.1 What is Architecture Design Document?

Any software needs an architectural design to represent the design of the software. IEEE defines architectural design as "the process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system." The software that is built for computer-based systems can exhibit one of these many architectures.

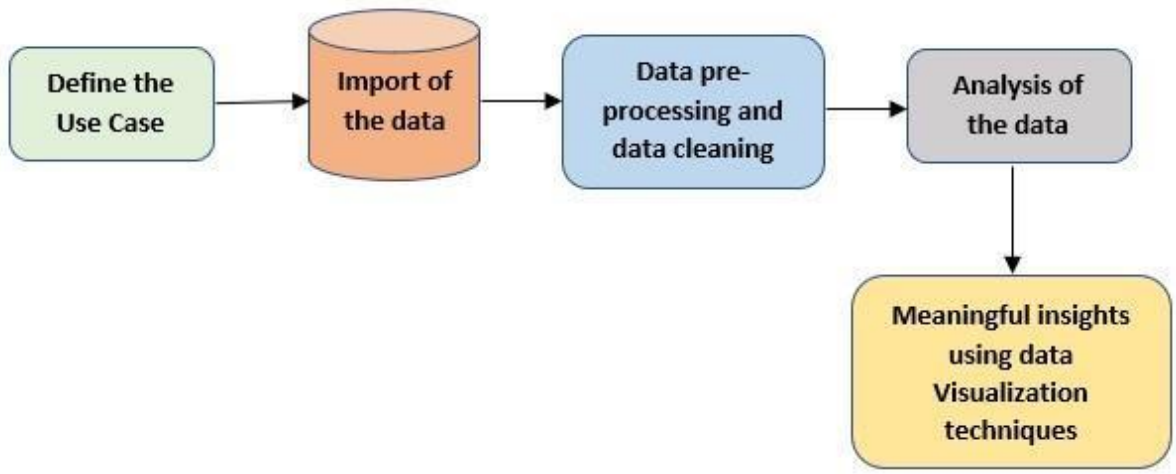
Each style will describe a system category that consists of:

- A set of components (e.g.: a database, computational modules) that will perform a function required by the system.
- The set of connectors will help in coordination, communication, and cooperation between the components.
- Conditions that how components can be integrated to form the system.
- Semantic models that help the designer to understand the overall properties of the system.

1.2 Scope

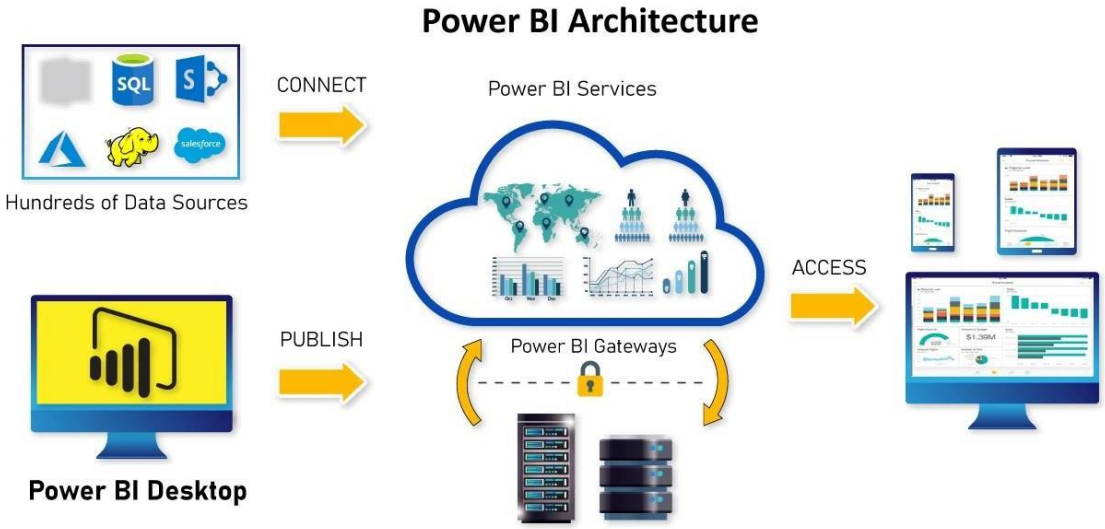
Architecture Design Document (ADD) is an architecture design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined during requirement analysis and then refined during architectural design work.

2. Architecture



Architecture for this project

2.1 Power BI Architecture



Power BI architecture is a service built on top of Azure. There are multiple data sources that Power BI can connect to. Power BI Desktop allows you to create reports and data visualizations on the dataset. Power BI gateway is connected to on-premises data sources to get continuous data for reporting and analytics.

2.2 Components of Power BI

1. Power Query

   Power Query is the data transformation and mash up the engine. It enables you to discover, connect, combine, and refine data sources to meet your analysis need. It can be downloaded as an add-in for Excel or can be used as part of the Power BI Desktop.

2. Power Pivot

Power Pivot is a data modelling technique that lets you create data models, establish relationships, and create calculations. It uses Data Analysis Expression (DAX) language to model simple and complex data.

3. Power View

Power View is a technology that is available in Excel, SharePoint, SQL Server, and Power BI. It lets you create interactive charts, graphs, maps, and other visuals that bring your data to life. It can connect to data sources and filter data for each data visualization element or the entire report.

4. Power Map

Microsoft's Power Map for Excel and Power BI is a 3-D data visualization tool that lets you map your data and plot more than a million rows of data visually on Bing maps in 3-D format from an Excel table or Data Model in Excel. Power Map works with Bing maps to get the best visualization based on latitude, longitude, or country, state, city, and street address information.

5. Power BI Desktop

Power BI Desktop is a development tool for Power Query, Power Pivot, and Power View. With Power BI Desktop, you have everything under the same solution, and it is easier to develop BI and data analysis experience.

6. Power Q&A

The Q&A feature in Power BI lets you explore your data in your own words. It is the fastest way to get an answer from your data using natural language. An example could be what was the total sales last year? Once you've built your data model and deployed that into the Power BI website, then you can ask questions and get answers quickly.

3. Deployment Description

3.1 Deployment Options in Power BI

- **On-Premises**: Refers to data, applications and infrastructure entirely owned by the client at the client's data centre and the client has complete control over it.
- **Cloud**: Refers to data, infrastructure and/or services residing in a public cloud environment and completely managed /controlled by a third party. Microsoft Azure and web-based Power BI services are examples of cloud offerings.
- **Hybrid**: This denotes the implementation which spans both on-premises and cloud sources which can be services, infrastructure and data sources.

3.2 On-Premises Deployment

- **Option 1: File Share**

  The first on-premises option involves the usage of a file share:

  - Data preparation and report creation are done in client tools: Power BI Desktop and/or Excel.
  - The completed Power BI Desktop and/or Excel file is published to a file share or a document collaboration area/repository.

- To view the reports, Excel or Power BI Desktop has to be installed on the viewer's machine.

- **Option 2: SharePoint**

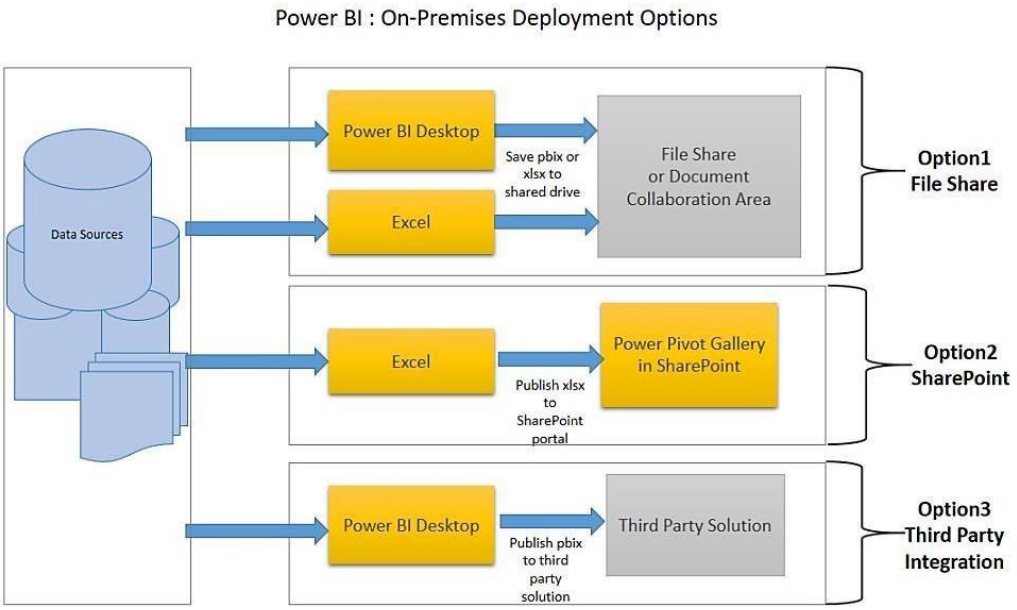
  The second on-premises option involves a specialized document library in SharePoint called the Power Pivot Gallery. Due to my limited knowledge, I am not going into the details of this option.

  - Data preparation and report creation occur in Excel.
  - The completed Excel file is published to SharePoint within a Power Pivot Gallery

Option 3: Third-Party Integration

The third on-premises option involves a third party which integrates with Power BI.

- Data preparation and report creation occur in Power BI Desktop.
- The completed Power BI Desktop file is published to the third-party server



3.3 Hybrid Deployment

► Option 1: Power BI Service

- Data is either from the on-premises corporate applications orit might be born in the cloud. It can even mix these two
- Data preparation and report creation occurs in Power BI Desktop or Excel

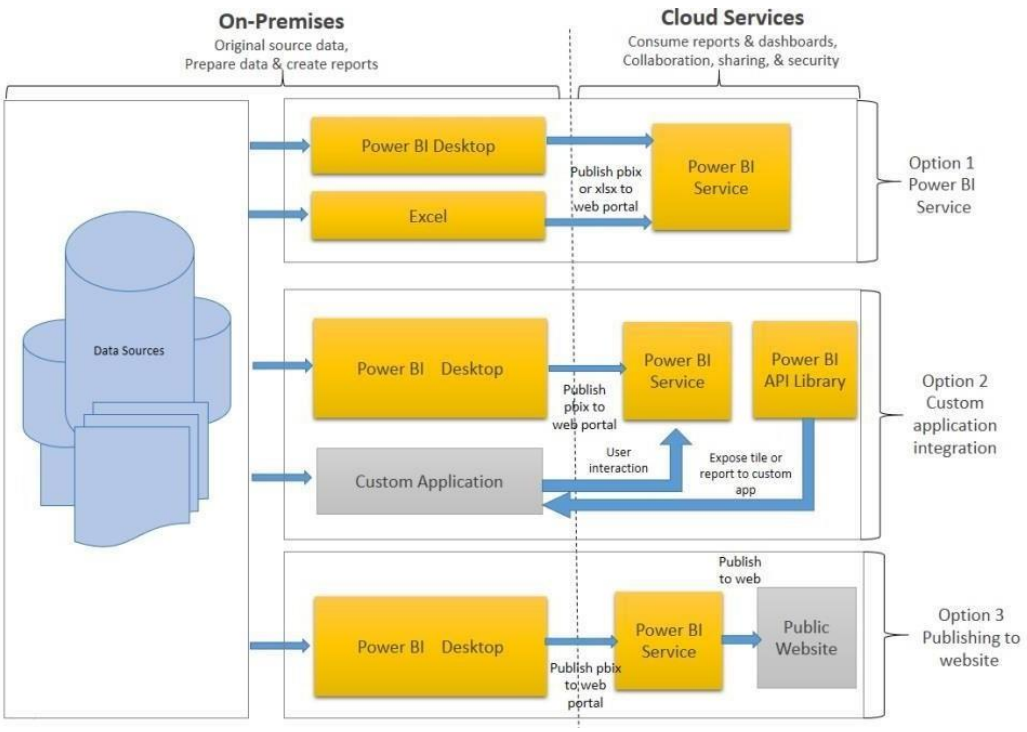
- Completed Power BI reports are then published to the PowerBI service
- Report consumption, sharing, security, collaboration, and datarefresh happens in the Power BI service
- Dashboards are created in the Power BI service and reports can also be edited or created in the Power BI service

► Option 2: Custom Application Integration

- Data is either from the on-premises corporate applications orit might be born in the cloud. It can even mix these two
- Data preparation and report creation occurs in Power BI Desktop or Excel
- Completed Power BI reports are then published to thePower BI service
- With Power BI API, these reports can be published in a custom web application or mobile app within iFrame.
- If the user interacts with this report, he/she will be redirectedto the Power BI service
- Application can be on-premise or cloud application.

► Option 3: Public Website

- Data is either from the on-premises corporate applications orit might be born in the cloud. It can even mix these two
- Data preparation and report creation occurs in Power BI Desktop
- Completed Power BI reports are then published to thePower BI service
- An embed code is generated by the Power BI service for the selected report and this code can be embedded in the web page of the website within iFrame
- Here no security is maintained as its public website, hence suitable for the data which can be made publicly available.


On-Premises
Original source data,
Prepare data & create reports
Cloud Services
Consume reports & dashboards,
Collaboration, sharing, & security
Data Sources
Power BI Desktop
Excel
Publish pbix or xlsx to web portal
Power BI Service
Option 1
Power BI Service
Power BI Desktop
Publish pbix to web portal
Power BI Service
Power BI API Library
Custom Application
User interaction
Expose tile or report to custom app
Option 2
Custom application integration
Publish to web
Power BI Desktop
Publish pbix to web portal
Power BI Service
Public Website
Option 3
Publishing to website