

# High Level Design (HLD) \

## CUSTOMER LIFETIME

## VALUE

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## Document Version Control

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## Abstract

Analyze the customer life-time value for an Auto Insurance Company. Its revenue will increase if the amount claimed by customers who have insured in the company is low. Bookish definition: CLV is the total revenue the client will derive from their entire relationship with a customer. CLV gives the marketers an intuition of market structures, financial planning and other future consequences. It helps marketers to find optimum marketing spending to acquire and retain customers. That basically says how much to spend on acquiring and retaining.

## 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 prior to coding, and can be used as a reference manual for how the modules interact at a high level

### 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

It is used as a collective term to refer to a broad range of economic services provided by the finance industry, which encompasses a broad range of organizations that manage money, including credit unions, banks, credit card companies, insurance companies, consumer finance companies, stock brokerages, investment funds .

Analyze the customer life-time value for an Auto Insurance Company. Its revenue will increase if the amount claimed by customers who have insured in the company is low. Bookish definition: CLV is the total revenue the client will derive from their entire relationship with a customer. CLV gives the marketers an intuition of market structures, financial planning and other future consequences. It helps marketers to find optimum marketing spending to acquire and retain customers. That basically says how much to spend on acquiring and retaining.

### 2.2 Tools Used

Business Intelligence tools such as Excel, Power Query, Power BI and Dax Language are used to build the whole framework.



## 3 Design Details

### 3.1 Functional Architecture

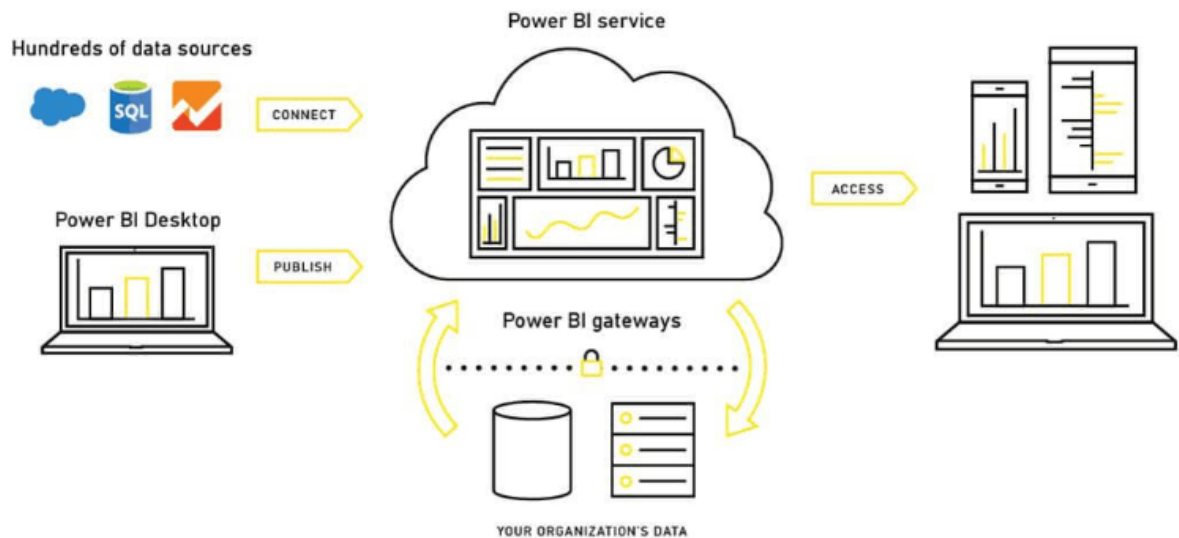


Figure 1: Functional Architecture of Power BI

## How BI Really Works



## 3.2 Optimization

### Use STAR Schema

Power BI is built to perform most efficiently when using a STAR schema. By breaking out your data model into fact and dimension tables, your queries will be optimized in your report. These fact and dimension tables should be related to one another, not joined (aka flat file format), which will result in more performant reports.

### Limit Data Model

The fastest way to optimize your Power BI report is to limit the number of columns to only the ones you need in your data model. Go through your tables in Power Query and determine what fields are being used. Delete these columns if they are not being used in any of your reports or calculations. Another way to limit your data model is to use Row Level Security when applicable.

### Use Measures Instead of Calculated Columns

For beginning Power BI users, it can be tempting to create calculated columns instead of using measures as you're able to see the row by row output for each calculated column. The issue is that calculated columns can be more burdensome for the data model as they create a new column of data. Instead, measures are simply aggregations of the fields in the data model, so they do not actually add new data to your model. Using measures where applicable will help reduce data model size as well as increase computation efficiency.

### Minimize Visuals

When creating your report, try and use as few visual elements in your report as possible. This will decrease the amount of calculations that Power BI is performing when rendering your report. An example of this would be using a multi-row card when showing multiple KPIs instead of using multiple single metric cards.

## 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

### 4.1 KPIs (Key Performance Indicators)

Key indicators displaying a summary of the Housing Price and its relationship with different metrics

1. Average Customer Lifetime Value of all Customers
2. Average monthly premium of all customers
3. Total Customer Lifetime Value of all customers
4. Total amount Claimed by all the customers.