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Churn Analytics

High Level Design (HLD)

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DOCUMENT VERSION CONTROL

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ABSTRACT

When a client chooses to discontinue utilising the goods or services, this is known as customer churn, often referred to as customer attrition. The rate at which the clients cease doing business is known as the customer churn rate. Churn happens in every business; the trick is to figure out why it's happening so that it can be lowered.

Churn happens in almost all businesses, and almost all of them want to prevent it. Many brands are (rightly) fixated on decreasing churn since it hinders business growth.

Many companies place more emphasis on acquiring new clients than keeping their current customers, and they are unaware of the cost of customer turnover until it has significantly eroded their earnings.

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1. Introduction

1.1   Why this High-Level Design Document?

The goal of this High-Level Design (HLD) Document is to provide the current project description with the additional depth needed to describe an appropriate model for coding. This paper can be used as a reference guide for how the modules interact at a high level and is also meant to aid in identifying conflicts before coding.

The HLD will:

- Describe each aspect of the design in depth.
- Include design features and the project's architecture.
- Describe the user interface being implemented, hardware and software interfaces, and performance requirements.
- List and describe any non-functional characteristics such as security and reliability.
  - Maintenance
  - Mobility
  - Resource use
  - Application compatibility
  - Reusability
  - Serviceability

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1.2   Scope

The HLD documentation outlines the system's architecture, including the technology architecture, application architecture (layers), application flow, and database architecture. The HLD employs simple to somewhat complex concepts that system administrators should be able to understand.

2. General Description

2.1   Problem Statement

A business is dealing with client attrition. The main goal is to precisely evaluate the customers' churning rate and churned customers count and the factors responsible for it in order to help the business gain insights into the services that it needs to improve.
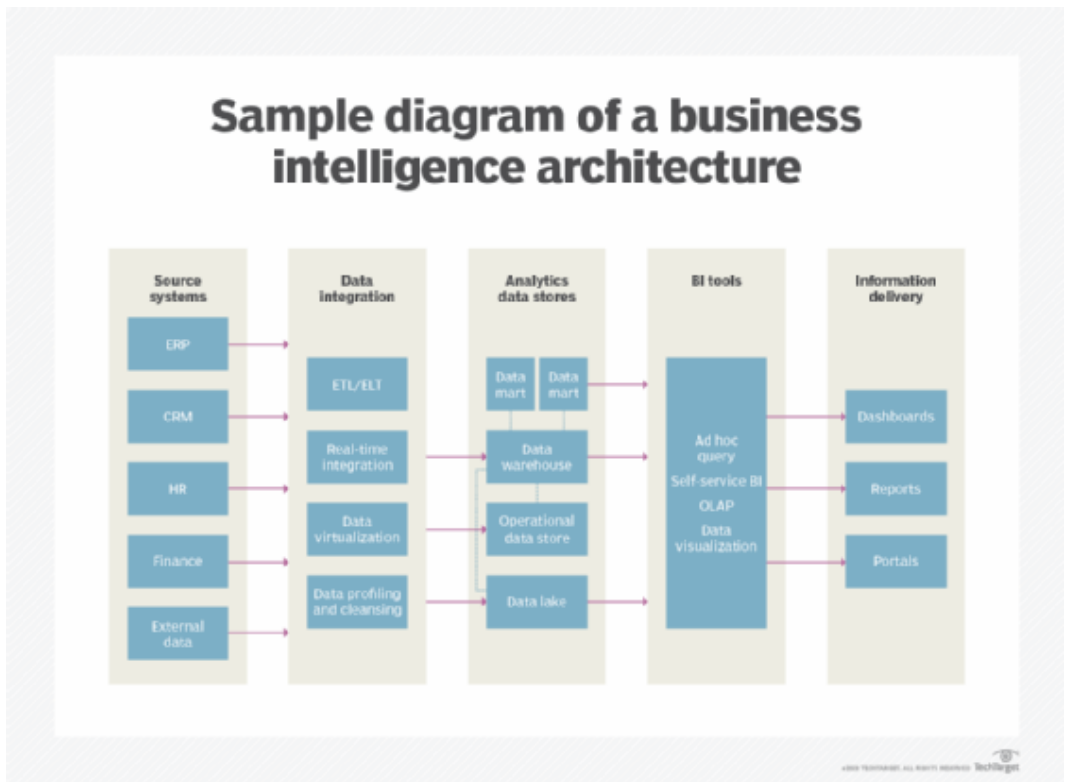
2.2   Tools Used

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Source:

https://logos-world.net/wp-content/uploads/2022/02/Microsoft-Power-BI-Symbol.png

https://icon-icons.com/icon/mysql-logo/169941

3. Design Details

3.1   Functional Architecture

Sample diagram of a business intelligence architecture

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Source:

https://www.techtarget.com/searchbusinessanalytics/definition/business-intelligence-architecture

Source:

https://www.techtarget.com/searchbusinessanalytics/definition/business-intelligence-BI
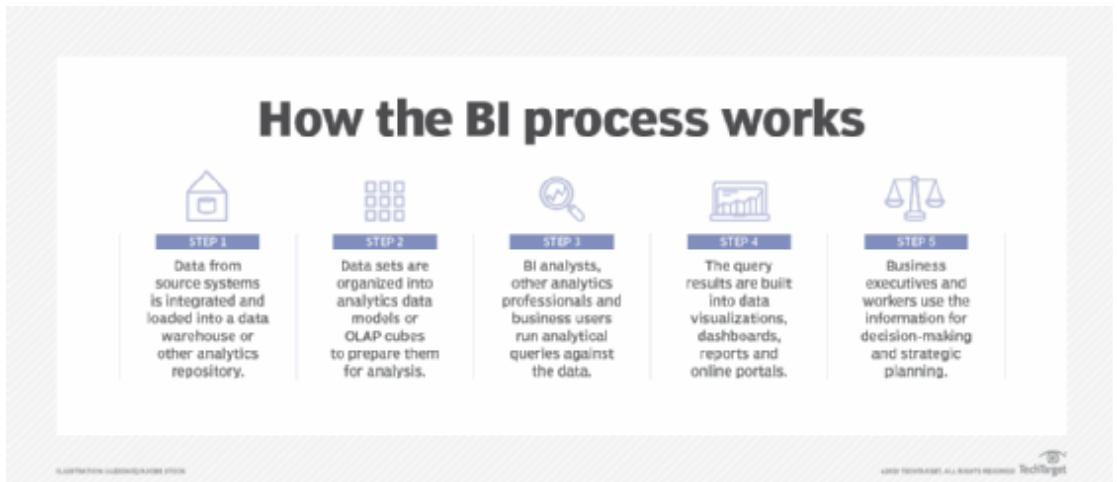
3.2   Optimization

3.2.1 Power BI

Optimising Power BI solutions include:

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1. Optimising the data model

The entire process of visualisation is supported by the data model. In Power BI, data models are referred to as datasets' relationships. It's crucial to be aware of the alternatives and select the right dataset type for the solution.

2. Optimising the visuals

The cache is routinely updated by querying the data source for Direct Query and live connection datasets. Although we can choose a different frequency in the dataset options, it normally occurs once every hour.

3. Power BI Reports

It is advisable to use the strictest filters possible.

4. Power BI paginated reports

By using best practise design to the report's data retrieval, Power BI paginated report designs can be made more effective.

We need to make sure that the capacity has enough memory set aside for the demand associated with paginated reports.

5. Optimising the environment

By customising capacity settings, scaling data gateways, and lowering network latency, we may optimise the Power BI environment.

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3.2.2 MySQL

Tables, queries, and configuration settings are just a few of the database-level variables that affect performance. We must reduce and optimise the CPU and I/O activities that these software constructs cause at the hardware level.

4. KPIs

Dashboard will be used to display and highlight KPI and important factors affecting the customers' churning. Dashboards will be incorporated as soon as the system begins collecting historical or regular data for a user in order to show progress on various indicators or factors over time.

4.1   Key Performance Indicators

In the dashboard, the following metrics have been used:

- Customers' Churning Rate
- Count of Churned Customers

5. Deployment

Evaluating the customers' churn rate helps a company to focus on the quality of the services and products it provides. The Customers' Churn Analytics dashboard helps to gain insights into

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the trends of the customers churning in various domains and what company can do to reduce the churning rate.

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