

High-Level Design (HLD)

Travel Insurance Data Analysis

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Document Version Control

Date Issued	Version	Description	Author
04/04/2022	1.0	Abstract, Introduction, General Description	Rahul
12/04/2022	1.1	Design Detail, KPI, Deployment	Rahul
22/04/2022	1.2	Final Revision	Rahul

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ABSTRACT:

With individuals being more mobile today than at any other point in history, travel has become an accepted part of academic, business and personal life in the modern world, exposing both businesses and individuals to new financial risk with each trip. Travel Insurance is a specialized form of insurance intended to cover financial default, medical expenses, and a variety of other sources of financial loss that can be incurred while travelling domestically or internationally.

A variety of issues can be covered by Travel Insurance, including, but not limited to: Medical / Dental Expenses, Return of a Minor Child, Emergency Evacuation or Repatriation of Remains, Trip Cancellation / Interruption, Accidental Injury / Death / Injury / or Disablement, Overseas Funeral Expenses, Curtailment, Delayed Departure / Missed Connection, Lost / Stolen / Damaged Baggage / Personal Effects or Travel Documents, Delayed Baggage (along with emergency replacement of essential items), Legal Assistance, Flight Connection Issues due to airline issues, Weather-related Travel Delays, and Hospital care.

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 before coding and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project
- List and describe the non-functional attributes like:

- Security
- Reliability
- Maintainability
- Portability
- Reusability
- Application compatibility
- Resource utilization
- Serviceability

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

This Project aims to Analyze Amazon Sales from 2017 to 2019 to know more in-depth information about the items that are in high demand, items that are generating high profits which items should not be sold and how much stock we have to maintain for further Sales etc.

2.2 Tools used

Business Intelligence tools and libraries works such as MS-Excel, MS-Power BI, are used to build the whole framework.



3 Design Details

3.1 Functional Architecture

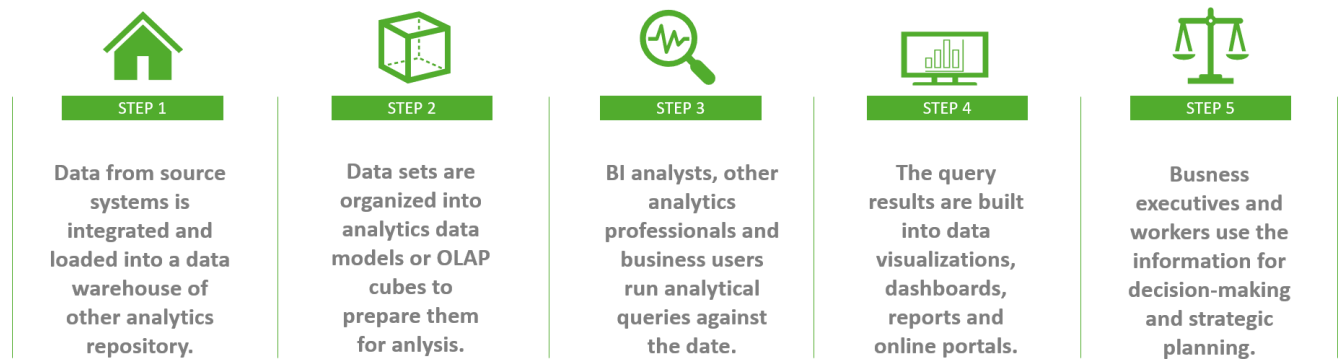
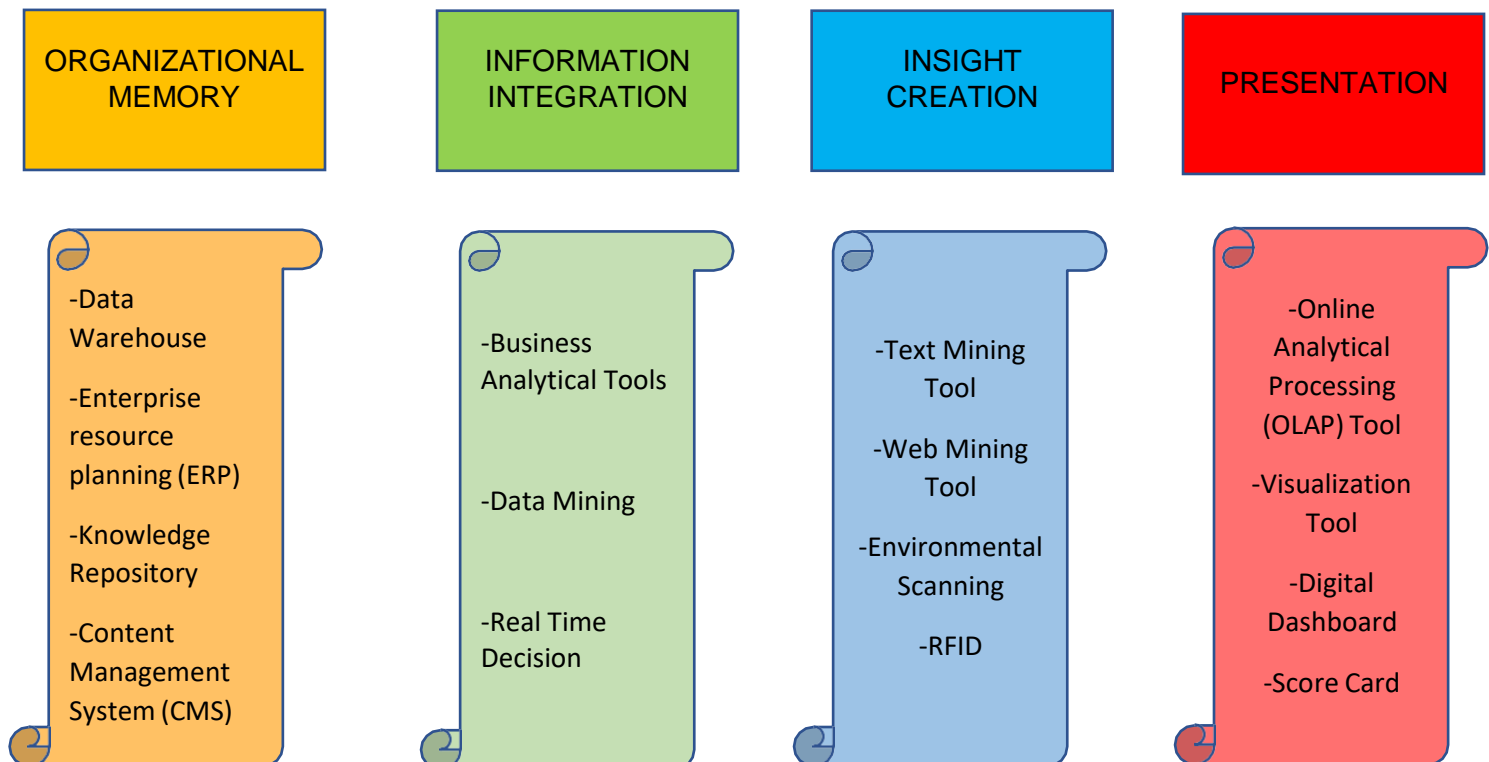


Figure 1: Functional Architecture of Business Intelligence

How BI Works



3.2 Optimization

1. Your data strategy drives performance

- Minimize the number of fields
- Minimize the number of records
- Optimize extracts to speed up future queries by materializing calculations, removing columns and the use of accelerated views

2. Reduce the marks (data points) in your view

- Practice guided analytics. There's no need to fit everything you plan to show in a single view. Compile related views and connect them with action filters to travel from overview to highly-granular views at the speed of thought.
- Remove unneeded dimensions from the detail shelf.
- Explore. Try displaying your data in different types of views.

3. Limit your filters by number and type

- Reduce the number of filters in use. Excessive filters on a view will create a more complex query, which takes longer to return results. Double-check your filters and remove any that aren't necessary.
- Use an include filter. Exclude filters load the entire domain of a dimension while including filters do not. An include filter runs much faster than an exclude filter, especially for dimensions with many members.
- Use a continuous date filter. Continuous date filters (relative and range-of-date filters) can take advantage of the indexing properties in your database and are faster than discrete data filters.
- Use Boolean or numeric filters. Computers process integers and Booleans (t/f) much faster than strings.
- Use parameters and action filters. These reduce the query load (and work across data sources).

4. Optimize and materialize your calculations

- Perform calculations in the database
- Reduce the number of nested calculations.
- Reduce the granularity of LOD or table calculations in the view. The more granular the calculation, the longer it takes.
 - ✓ LODs - Look at the number of unique dimension members in the calculation.
 - ✓ Table Calculations - the more marks in the view, the longer it will take to calculate.
- Where possible, use MIN or MAX instead of AVG. AVG requires more processing than MIN or MAX. Often rows will be duplicated and display the same result with MIN, MAX, or AVG.
- Make groups with calculations. Like include filters, calculated groups load only named members of the domain, whereas Tableau's group function loads the entire domain.
- Use Booleans or numeric calculations instead of string calculations. Computers can process integers and Booleans (t/f) much faster than strings. Boolean>Int>Float>Date>DateTime>String.

4 KPI

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)

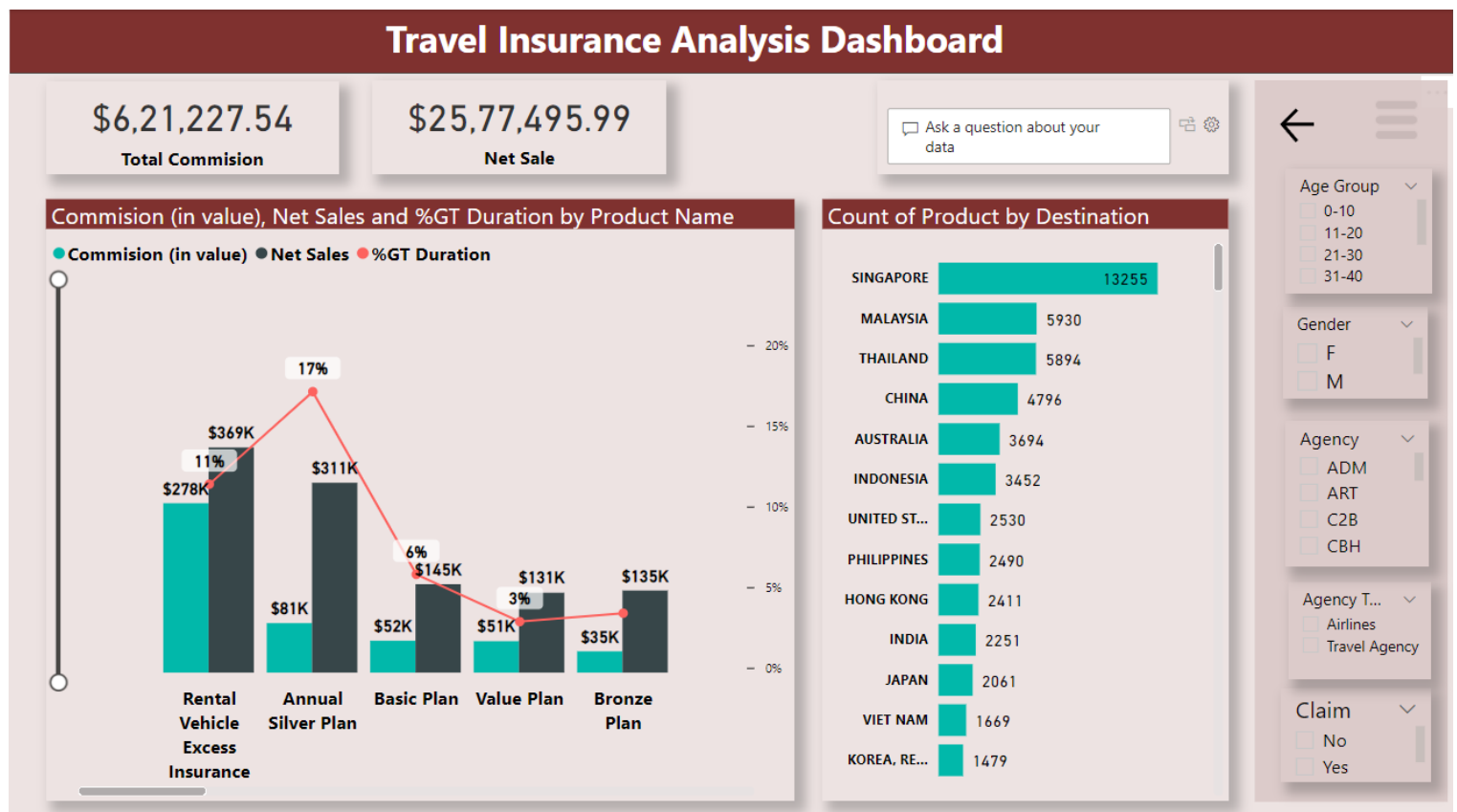
Key indicators displaying relationship of Product (Plan), Destination, Age Group with different metrics.

5 Deployment

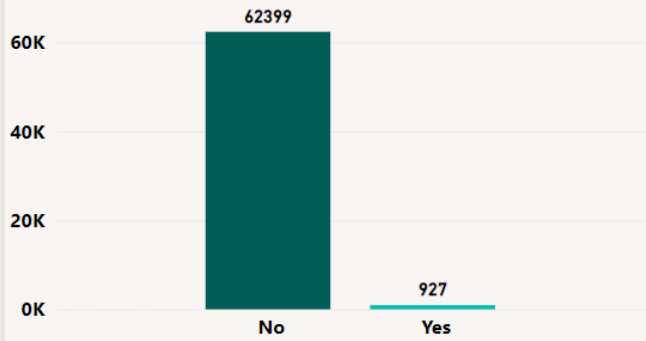
Prioritizing data and analytics couldn't come at a better time. Your company, no matter what size, is already collecting data and most likely Analyzing just a portion of it to solve business problems, gain competitive advantages, and drive enterprise transformation. With the explosive growth of enterprise data, database technologies, and the high demand for analytical skills, today's most effective IT organizations have shifted their focus to enabling self-service by deploying and operating Power BI at scale, as well as organizing, orchestrating, and unifying disparate sources of data for business users and experts alike to author and consume content.

Power BI prioritizes choice in flexibility to fit, rather than dictate, 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, there is a version of Power BI to match your requirements.

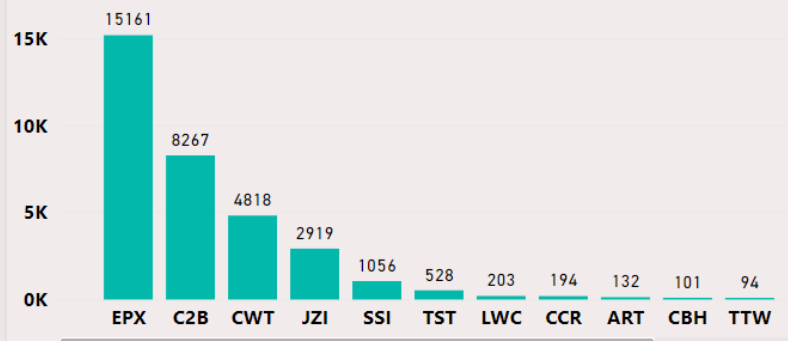
Travel Insurance Analysis Dashboard



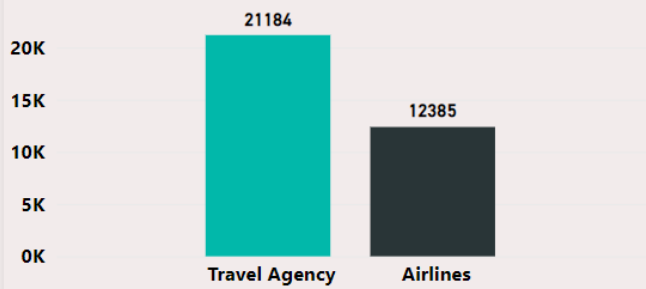
Product Claimed vs Not Claimed



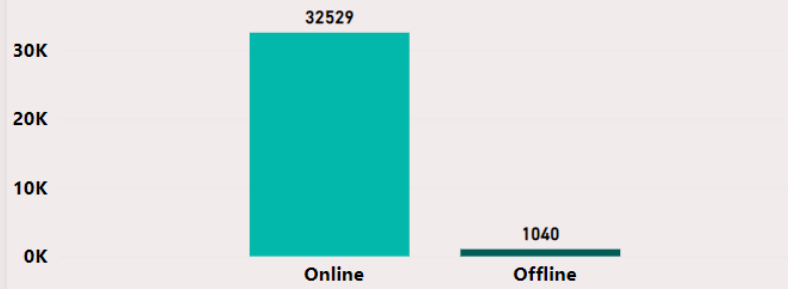
Product Count by Agency



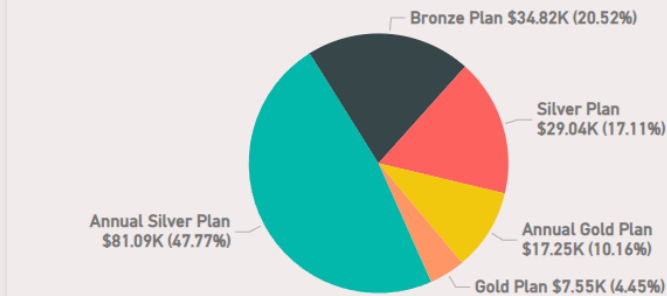
Product Count by Agency Type



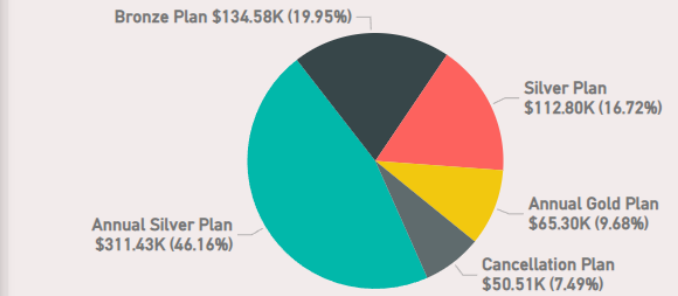
Product count by distribution channel



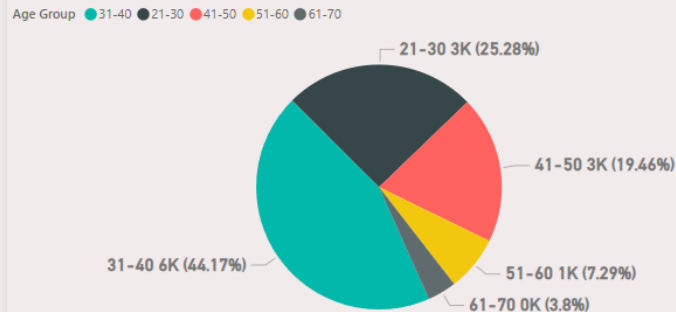
Top 5 Products by Commision



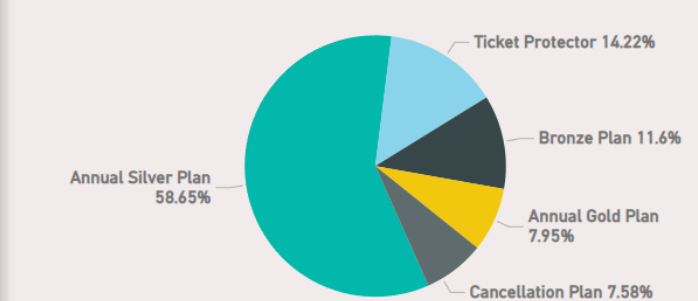
Top 5 Products by Net Sales



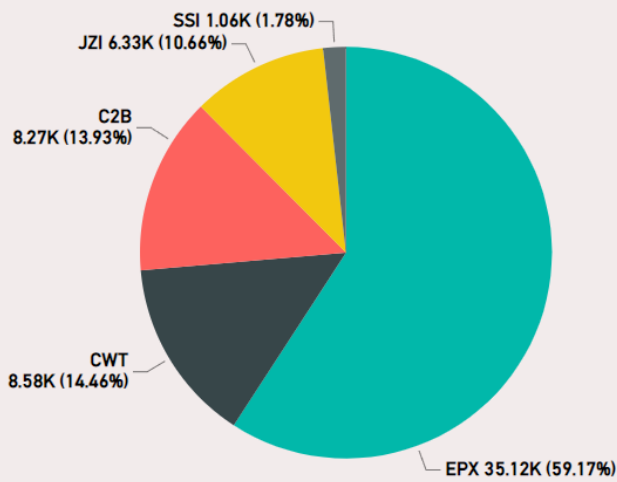
Top 5 Age Group by Product Count



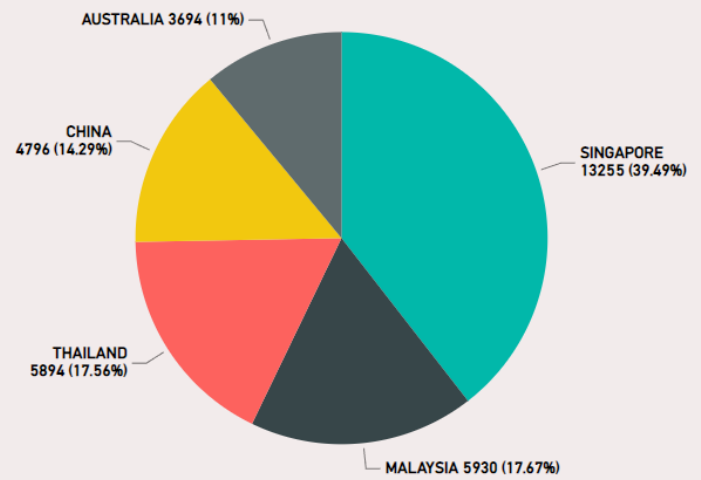
Top 5 Products by Duration



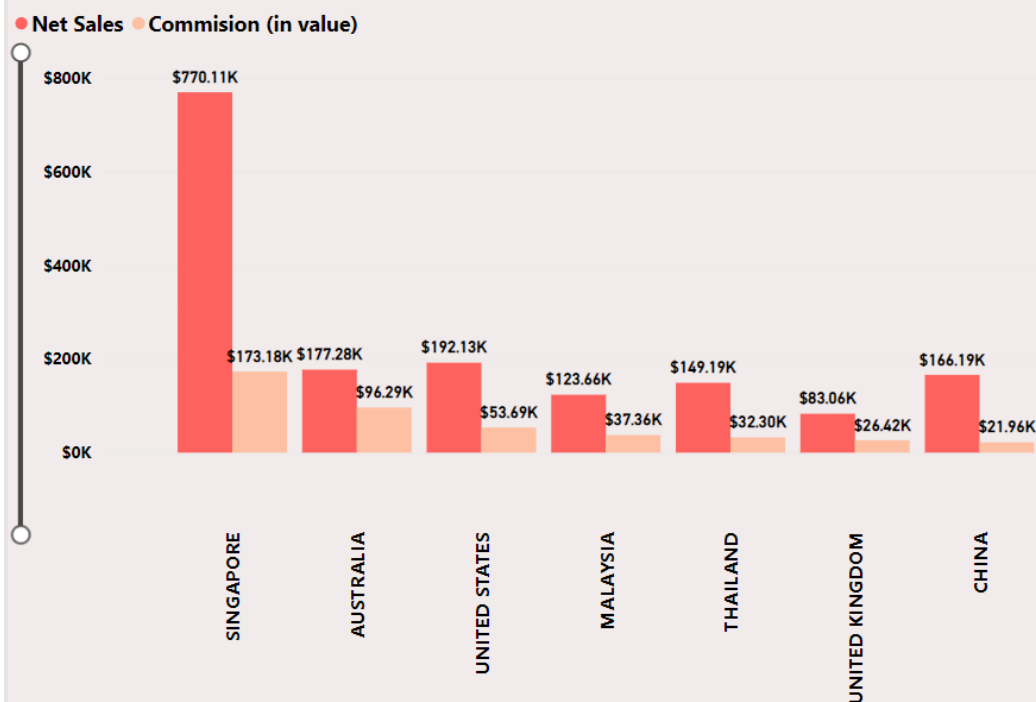
Top 5 Agencies ranked by Product count



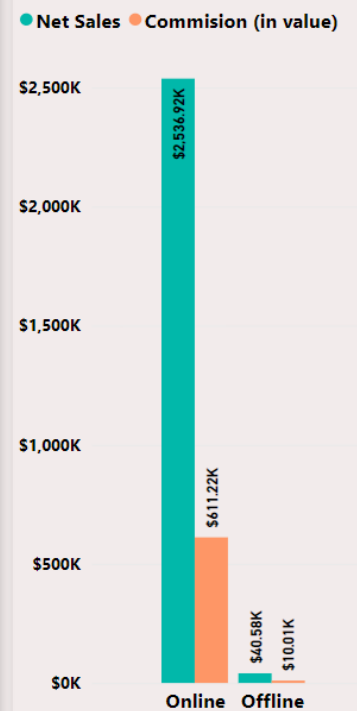
Top 5 Destinations ranked by Product count



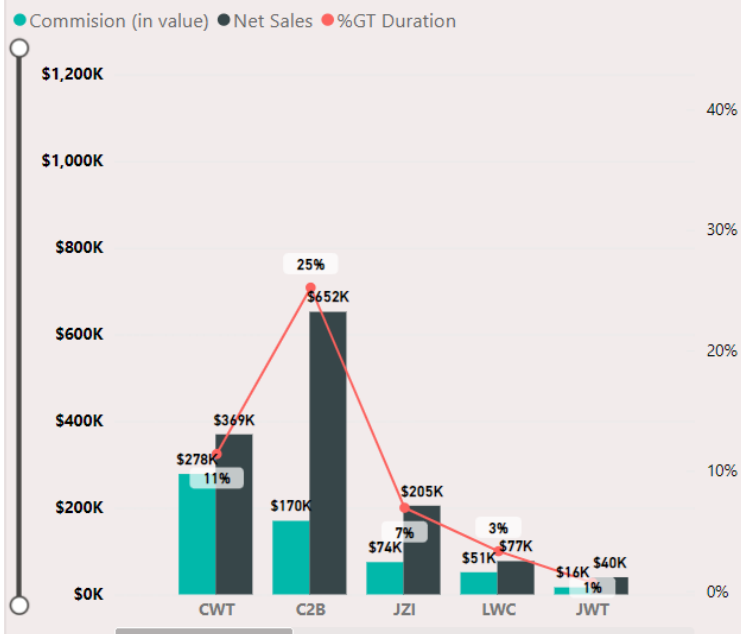
Net Sales and Commision (in value) by Destination



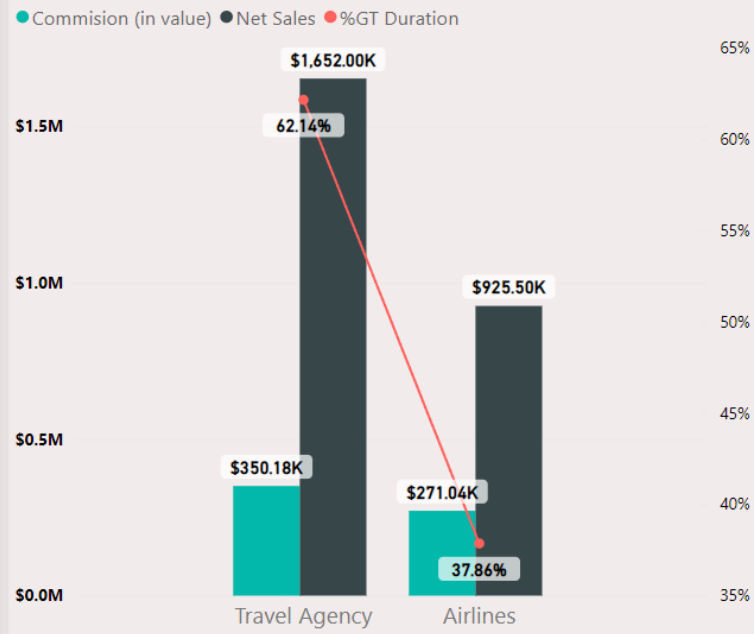
Net Sales and Commision (in value) ...



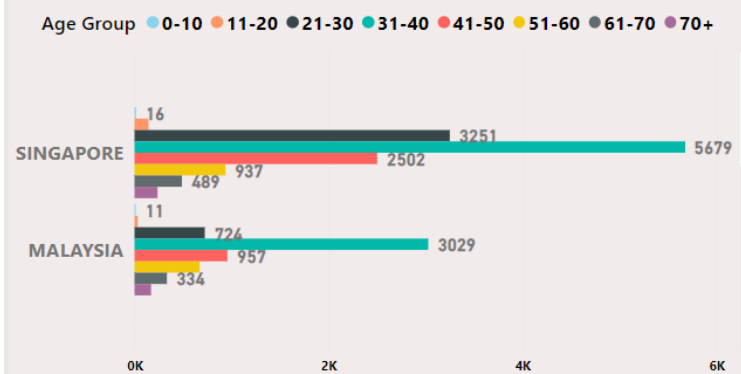
Commision (in value), Net Sales and %GT Duration by Agency



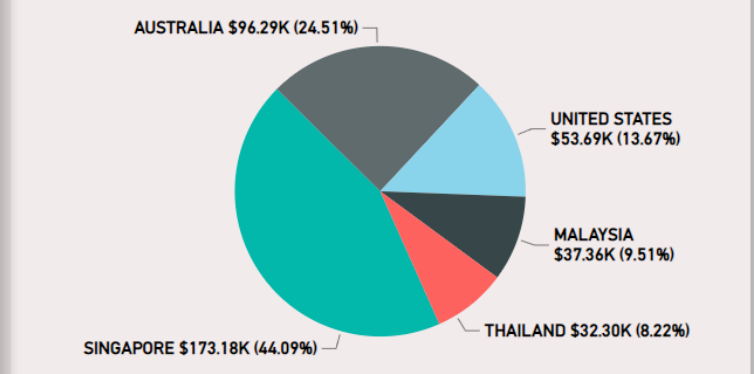
Commision (in value), Net Sales and %GT Duration by Agency Type



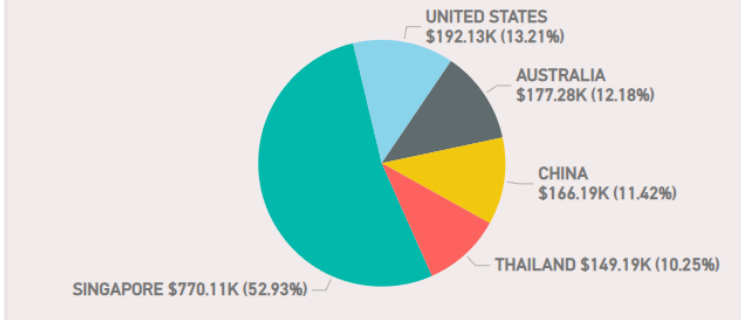
Top 5 Destinations by Age Group



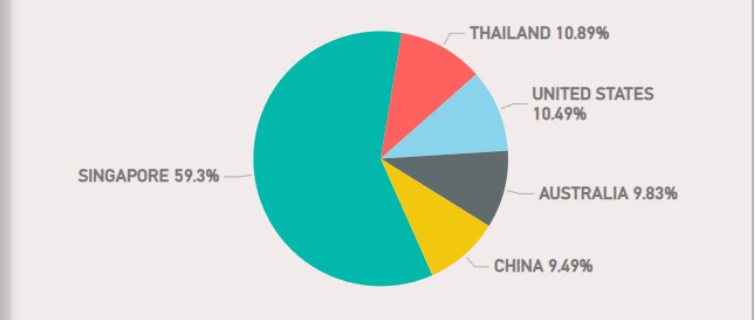
Top 5 Destinations by Commision



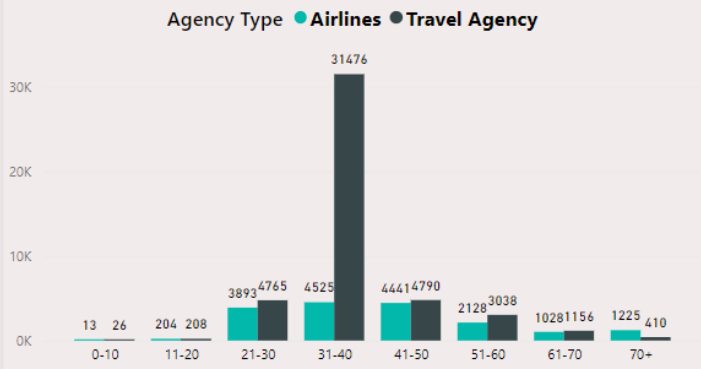
Top 5 Destinations by Net Sales



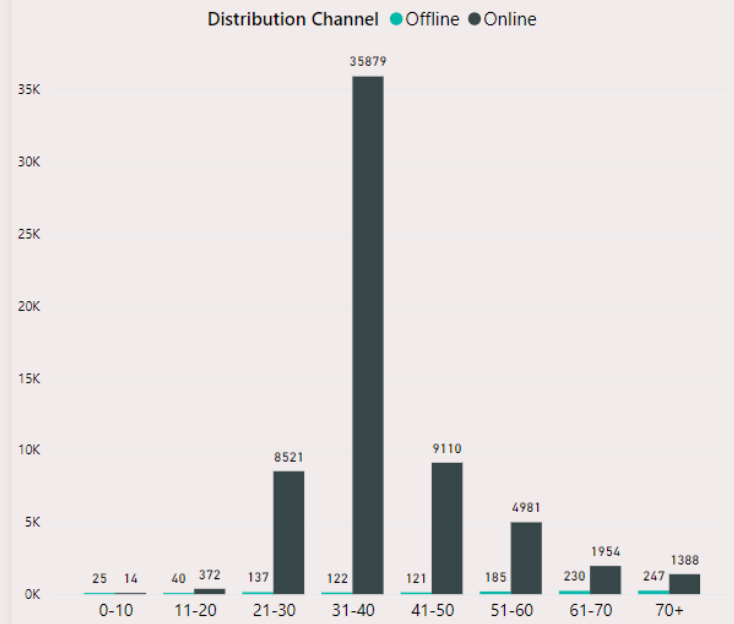
Top 5 Destinations by Duration



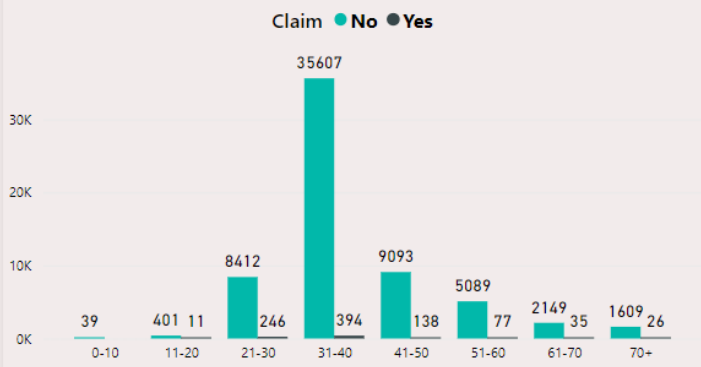
Count of Agency Type by Age Group



Count of Distribution Channel by Age Group



Count of Claim by Age Group



Destination

ALBANIA	ARGENTINA	AUSTRALIA	AZERBAIJAN	BANGLADESH	BELARUS	BENIN	BHUTAN	BOSNIA AND HERZEGOVINA	BRAZIL	BULGARIA
ANGOLA	ARMENIA	AUSTRIA	BAHRAIN	BARBADOS	BELGIUM	BERMUDA	BOLIVIA	BOTSWANA	BRUNEI DARUSSALAM	CAMBODIA

Comparing Data by Destination

