

AVIATION INFOGRAPHICS

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1. BACKGROUND OF THE DATASET:

Data used for this infographic has been taken from the World bank [1], Statista [2], Wikipedia [3]. Idea of this infographics is to provide the information about the aviation industry. For the 1st three charts, dataset from world bank is used and this data is used to understand the Increasing growth of aviation industry. Dataset Shows the information about of global passengers count from 1970-2017 and top three countries with Maximum passengers and top 3 countries with Minimum passengers from 1970-2017 are derived in tableau through this dataset. Cleaning is not required for this dataset. Dataset for fourth chart is selected from Statista and is useful to understand the Top 10 Airline with the with Maximum passengers. Png images are downloaded from free website for more understanding and attractiveness of infographics. Data for fifth chart is collected from the Wikipedia. This dataset cleans in excel manually and top 10 airports are selected and spread sheet is created. Sixth chart shows information about the world's longest route, which is Singapore to Nework takes almost 19hrs for 16,700km in 2017. Data for this chart is collected from Statista. Below is the dataset description with the attributes and charts name with which dataset is used.

Dataset Description

Sr.no	Chart Title	Source	Attributes
1	Air Passenger Traffic From 1970-2017	WORLDBANK	Country Name, year, passenger Volume
2	Top 3 Countries with Maximum Passengers from 1970-2017	WORLDBANK	Country Name, year, passenger Volume
3	Top 3 Countries with Minimum Passengers from 1970-2017	WORLDBANK	Country Name, year, passenger Volume
4	Top 10 Airline in the World by sales(2017)	STATSITA	Largest airlines worldwide names, sales (in billion U.S. dollars)
5	Top 10 Busiest Airport in the World by Passenger Volume(2017)	WIKIPEDIA	Rank, Airport, Location, country, code, Total passengers, longitude, latitude
6	The World's 10 Longest Non-Stop Flights	STATSITA	Country from, county to, time, distance (Longitude, Latitude manually added to dataset)

2. PROCESS

Creating effective and Sharable infographic information can be categorise in few ways Chronologically, Alphabetically, Geographically, Categorically or Hierarchically. There are different type such as **MIXED** charts, Informational chart, Timeline and How to some of them. This Infographic is created as **MIX charts** which contains not only bar char but also Maps. This chart is selected because of lot of stats and facts. Before Creating the infographics focused was on below factors Target audience, Defining the Goal and Medium, Topic Selection, gathering right information about the Topic and finally telling the story [19]

1. Data collection and pre-processing:

Data is downloaded in the .csv format. Unwanted column is removed from the sheet and separate MS Excel sheets are created for each of the chart. for the final chart longitude and latitude is required to plot the data on to the Map. Manually longitude and latitude are identified and added to the.csv file. Free logo of the airlines is Downloaded and used in the charts for the understanding and increasing attractiveness of the chart. Image of first airplane is used in summary section.

2. Data analysis and visualisation:

The Data which is stored in the Excel sheet is processed with Tableau (2018.2) software for the visualization. Analysis were carried out and charts and graphs are developed. MapBox is used and integrated with Tableau to use customise Maps.

3. Infographic designing:

Complete Infographics is made in the Tableau (2018.2) software which is use for the visualization. Customise dashboard is selected with the size 1000px * 2600px. A title was written for the infographic to tell the story as per the data is available. Separate worksheets are created for each chart in the. Different icon and symbolis used to make infographic more attractive. Same font is used in the chart and graphs in Tableau.

SPECIFICATION:

STORY BEHIND THE INFOGRAPHIC

Data which is showed through the visualization is more easily readable, accessible and accurately understandable. Goal of the data visualization and infographics delivered information over specific subject in story like manner.

The main motivation to build an infographic is to build and tell the facts through the story about the aviation industry. This infographic mainly describes the historical story till year 2017. This summary also states that that oldest airlines, airports and about the first Pilot. Image of first airline is used for the general awareness.

- Infographic is beginning with Summary which tell about the begging of the aviation industry. And some unknow facts about the airlines and airports
- In next section Focus is shifted to passenger volume, which shows the growth of the passenger from 1970-2017 and countries with maximum and minimum passenger volume.
- Further drill down to show top 10 airline according to sales in year 2017.
- Similarly, busiest Airport in 2017 is showed with charts
- Final chart shows the longest non-stop flights and table is created in tableau for more description and clarification which include arrival, departure, duration and distance for the longest flight.

4. JUSTIFICATION

This infographic uses various designing methods

1. Techniques

For Visualization it is very important to prepare and analyse the data. Data available with the help of Microsoft Excel and visualize with help of Tableau. Various charts can be created using the MS-Excel but for this infographic Tableau is used for the infographic. Various mathematical parameter such as Sum, Average, Minimum, Maximum and sorting is used with help of Tableau. Selection of the chart is tricky part, it is depended on the type of data such as qualitative or quantitative data. For nominal data pie chart and bar graph is used. Data for interval ratio time plot and value bar is used. The Visualization included in the infographics are:

Time-series: To show yearly data from interval of 1970-2017.

Radial Chart: To represent the countries with Maximum passengers from year 1970-2017

Dual axis chart(line and bar) : Countries with Minimum passengers are shown in the Dual axis chart.

Bar chart: Vertical bar chart is used show the top 10 airlines with sales and also.png icon is used for more understanding.

Map: To show top 10 airport. Tableau is integrated with Map Box to use this chart and location symbol is used for the airport.

Map: Map and line chart is combining to show the longest route and customise table is created in tableau in supporting of this graph to show the details of the chart.

2. Layout

Layout selection was tricky part as this infographic followed drill-down approach. Horizontal and vertical container is used in floating mode in the dashboard because of Number of Worksheet. For this Dashboard layout Height is 2600px and Width 1000px.

3. Colours

Colours are most important for the quick understanding of the information and also helpful to maintain the connection with different charts. Suitable Background is selected for the dashboard which contain the mixture of basic colours red, green, blue 96.1% red, 91.8% green and 84.3% blue .For the letters and number White colour is used. In all the charts the intensity of the colour is maintained. Low Numbers in all the charts show with the light colour and all high numbers in the chart shows with dark colour. Intensity of colour is increases as the value increase and decreases with the value decreases. This is applicable to all the charts excepts final chart where separate colour is used for each duration.

4. Style

The motive of this infographic is to present information to the targeted audience in an interactive manner and text is very important. for this infographic. Arial Black font is used with size 10 and is used throughout the report for the headlines and for other charts and some important text uses italic font.

5. Icons

Multiple icon is used in the report and each icon is represent about the airport and airline. Png icons are used and blend very well in tableau Dashboard.

6. Alignment

Various container such as vertical and horizontal. Containers are the object basically provided by the tableau and be seen in the dashboard is align. All the container is kept in the floating and are kept in tiled.

5. TECHNOLOGIES

Key of good visualization is selection of charts and graphs Tableau provides recommendation for different chart and graphs such as bar charts, Pie charts. Tableau 2018.2 is used throughout to build the infographic dashboard and Ms-Excel is used with Tableau for the tabular data storage and analysis option.

6. REFLECTION

- Understanding the concepts of visual storytelling and implementing complex dataset to deliver the message was not easy task.
- Most time taking part in this chart is creating complete Dashboard in Tableau 2018.2, which is something challenging and require in depth knowledge, understanding of Tool and imagination. For This training videos from tableau website are refereed [20].
- Accumulating the proper dataset, making of charts from the dataset and fitting of the charts in sequence with in the dashboard is something that is challenging.
- Understanding and integrating Map Box with tableau is not so difficult [21] .
- Initially Jpg Icon was used which shows white background in the sheet and this is avoided by changing icon to PNG format which bend easily in the chart background.
- It is very Difficult to Tell the story Visually and at the same time Maintaining the simplicity and user understandability of the Dashboard.

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