

## **GROUP (UP TO 3 PEOPLE) WEB ANALYTICS ASSIGNMENT #1 (30 POINTS)**

**DUE DATE: Wednesday, 6/2/2021**

**Each group only need to submit one copy**

- This assignment will analyze the data (AirFrance.xls), interpret the results, and make recommendation from the Case: Air France Internet Marketing: Optimizing Google, Yahoo!, MSN, and Kayak Sponsored Search (KEL 319). **Please read the case first and follow the instructions in the following very carefully to do this assignment!**
- Please do the following analyses using the data in the “DoubleClick” sheet of the excel file and answer the corresponding questions. **Please copy/summarize your key results for each question to a word file along with your answers to be well organized to produce the final report.**

1. **(10 Points)** Add four additional metrics (columns) into your data using the formula provided

- Net Revenue (Amount (total revenue) – Total Cost))
- Return on Ad \$ Spent (ROA) (Net Revenue / Total Cost) (*Note: Set this variable as percentage; if Total Cost is 0, then set ROA as 0 for that observation.*)
- Average Revenue per Booking (Amount /Total Volume of Bookings) (*Note: if Total Volume of Bookings is 0, then set “NA” for that observation*)
- Probability of Booking (Engine Click Thru % (CTR) \* Trans. Conv. % (TCR) / 10000)

Please provide descriptive statistics (Count, Max, Min, Mean, and Std.) for variables (CTR, TCR, ROA, Net Revenue, Avg. Cost per Click, Average Revenue per Booking, and Probability of Booking. **Please ONLY report a summary statistics table and provide descriptions of your observations and thoughts.**

- Please make a **Scatter Plot** (with Trend line), a **Histogram**, and a **Box Plot** for any of the variables **of your own interests** in the data. Then report any insights you may be able draw from the charts.

2. (10 points) Use pivotTables to summarize metrics for each publisher. Please report the summary table including the variables as shown below. **Please report your summary excel table and discuss Key Observations and Takeaways.**

Publisher Name	Sum of Net Revenue	Sum of Click Charges	Sum of Clicks	Average Position	Total Volume of Bookings	Average Cost Per Click	Average Revenue Per Booking	ROA	Cost/Booking	Probability of booking
Overture - Global										
Overture - US										
MSN - Global										
MSN - US										
Google - Global										
Google - US										
Yahoo - US										
All Publishers										

**\*\*\*Please Note that the “All Publishers” part may represent “total” for some columns, but “average” for other columns**

**Hint:** Always go back to the original formula! use the “sum” function in pivotTable to get the Sum of Net Revenue, Sum of Total Volume of Bookings, Sum of Click Charges, Sum of Clicks, Sum of Amount, and Sum of Impressions, and Etc. Then use those variables to further calculate Average Revenue Per booking and Probability of Booking. **Or** you can use the **calculated fields** (more straightforward) as shown in the following tutorial <http://www.excel-easy.com/examples/calculated-field-item.html> (This is also included in the “Analytics Tutorial Part II”).

3. (10 points) Please conduct regression analysis to study what factors influence the **Total Volume of Bookings**. Basically **Total Volume of Bookings** is your dependent variable (Y) and your task is to determine what the important independent (explanatory) variables are. You should try different set of independent variables in the data set to see which one(s) has significant results (you may need to create dummy variables for some of the non-numerical variables). Please report 1) the final set of independent variables you have chosen and **why** you have chosen them; and 2) the estimated regression equation with simple explanations for each estimated coefficient ( $\beta$ ). (**Hint:** you may start with doing pair-wise correlations between Y and other variables to see what variables are significantly correlated with Y.)