Google Data Analytics

Final Project

**Scenario:**

*The Nike sales manager from Australia finds from the TV news that Adidas’ turnover, sales volume, and overall profitability exceeded Nike’s significantly during the period 1/01/2016-01/01/2017, and especially for the women products, in New South Wales.*

*As the manager is concerned about the possible biases stemming from the news, he wants to test the current hypotheses, so he asks a data analyst to find out the truth.*

**Data Analysis Steps:**

**Ask:**

*During the “Ask” phase, clear and precise questions about the issue in matter should be addressed in order to approach them correctly and follow a proper track.*

## Questions to be asked:

* *Did Adidas’ total turnover and sales volume exceed Nike’s, in NSW, during the period 01/01/2016-01/01/2017?*
* *Did Adidas’ turnover and sales volume for women products exceeded Nike’s, in NSW during the period 01/01/2016-01/01/2017?*

**Prepare:**

*The “Prepare” phase has as main purpose the clarifications about further actions with regards to the “Ask” questions.*

## Questions to be asked:

* *What kind of data do we need?*
* *Where can we find that data?*
* *Do we already have it internally in our databases, or do we need an external source?*
* *Is the data source trustworthy and lacking bias?*
* *How can we extract the data?*
* *Who will take responsibility for these tasks?*
* *How much is going to cost us the entire process?*

## Action Plan:

- After a thorough analysis and brainstorming about all the issues mentioned above, the conclusion was that sales and date data needed to be collected in order to fulfil the main task.

- As the data could not be found internally due to data privacy issues, it was found publicly, on Kaggle.

- In order to test the veracity of the data, the publisher was contacted in order to ask for further details.

- The dataset didn’t require an extraction from a database as it was posted in a CSV. file. Thus, a mere download was enough in order to obtain the necessary data. The file was scanned in order to check for malware attacks, and the metadata was scrutinized in order to keep the information intact.

- As the information was public, no related costs were involved.

**Process:**

*The process step involves more tasks that would get the dataset to a final format in order to be analysed correctly. In order to do so, the “R” software was used.*

## Action Plan:

- The data was downloaded in a CSV format

- The dataset was formatted in Excel in order to establish the right data types for each column (text as text, numbers as numbers, dates as dates). This formatting will help avoiding future errors for the analysis step.

- The data was imported in R Studio

- The data wrangling and manipulation steps took place in order to bring the dataset to a final version *(joining two tables, renaming and cleaning header names, creating new columns based on a formula, filtering, ordering, grouping values, aggregating data).*

**Analyse:**

*The analyse step plays a pivotal role in establishing conclusions and the story about the data.*

## Action Plan:

- The aggregated values created at the preparation step have been compared in order to observe differences, possible trends, and patterns.

- After scrutinizing the information coming from the data, new insights were created and a new story emerged. By doing so, stakeholders can understand better what happened with the help of descriptive analytics.

**Share:**

*This process is essential in communicating results and making other people aware about findings.*

*“Data cannot speak for itself. We, humans, are the ones responsible for acting as a proxy in the name of it.”*

## Action Plan:

- Visualizations were created in R Studio in order to illustrate the findings.

- A Power Point presentation was realised in order to sum up the results

**Act:**

*The Act step is what makes the difference between ideas and results. By having the information available, it is important as well to include action in order to create a positive impact in the name of any organization.*

## Action Plan:

- The first recommendation would be to carefully consider raising the prices for Nike products without impacting the main target market and the customers portfolio.

- The second recommendation is to consider managing better the costs in order to improve the profitability of the company, which is a major issue in this case.