

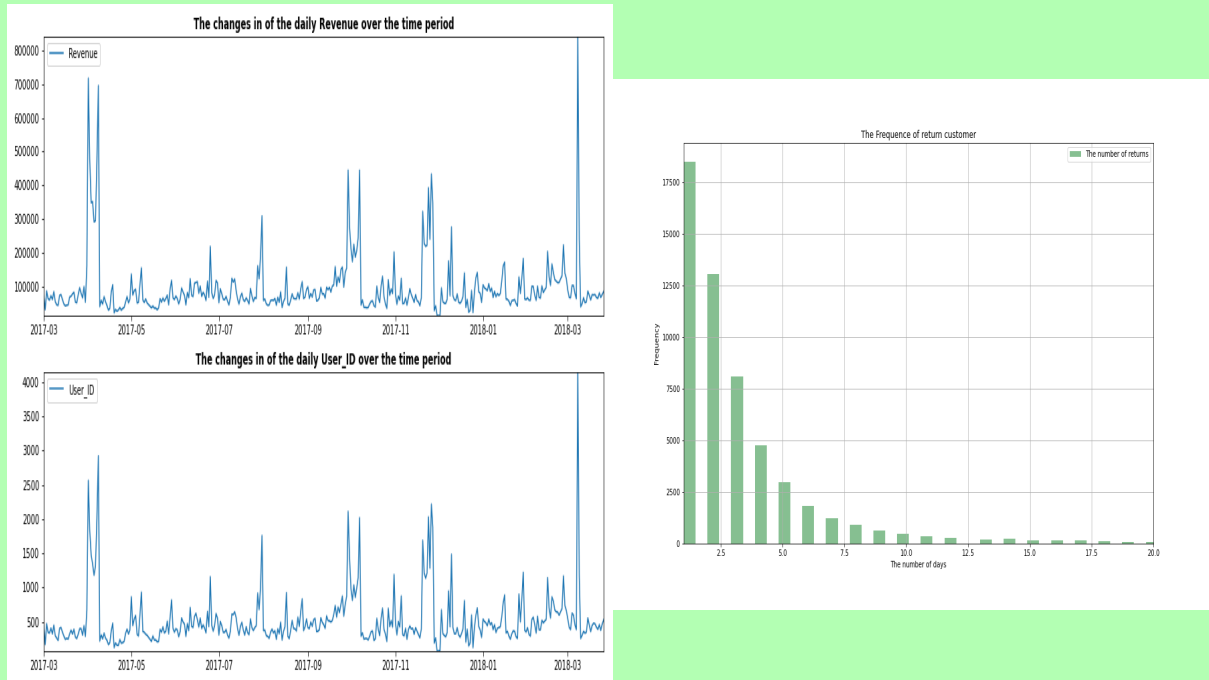
Business Intelligence Data Challenge

Candidate: Phuong Van Nguyen

1 An Overview on the Business Results

The Business Results

Figure 1: An Overview on KPIs



The business results from the e-commerce activities from March 1st, 2017 to March 26th, 2018 can be seen from Figure 1 above. In particular, the interesting KPIs are briefly reported as follows.

1. The total annual revenue from the e-commerce was 37,488,970 Euros. This online business activities attracted 204,422 visits from more than 55,000 users. In addition, over 200,000 conversions were done via over 20 different Online Marketing Channels.
2. Two left-sided panels in the in Figure 1 above shows that the daily revenue and number of visits fluctuated a lot. However, the daily revenue average was over 96,000 Euros. On the other hand, every day, there were over 500 visits on average. More notably, the highest number of daily users overcame 4,000 visits. As a result, revenue reached a peak of more than 800,000 Euros.
3. The right-sided panel in Figure 1 above shows the frequency of return customers. Accordingly, most of the people visited only once. However, the number of users who returned from twice to ten times was also very notable. Especially, there is an extreme case that a customer returned 111 times.

2 Which Factors and How They Drive the KPIs

How do the Online Marketing Channels contribute to the KPIs?

Figure 2: The Role of The Online Market Channels

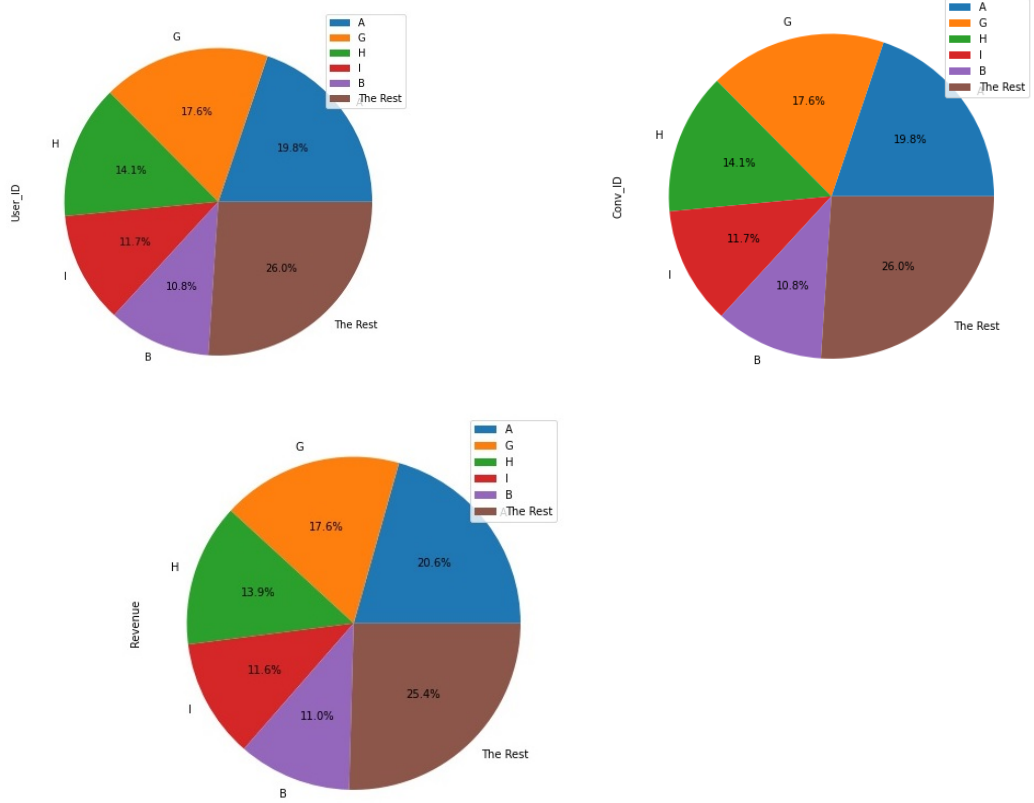
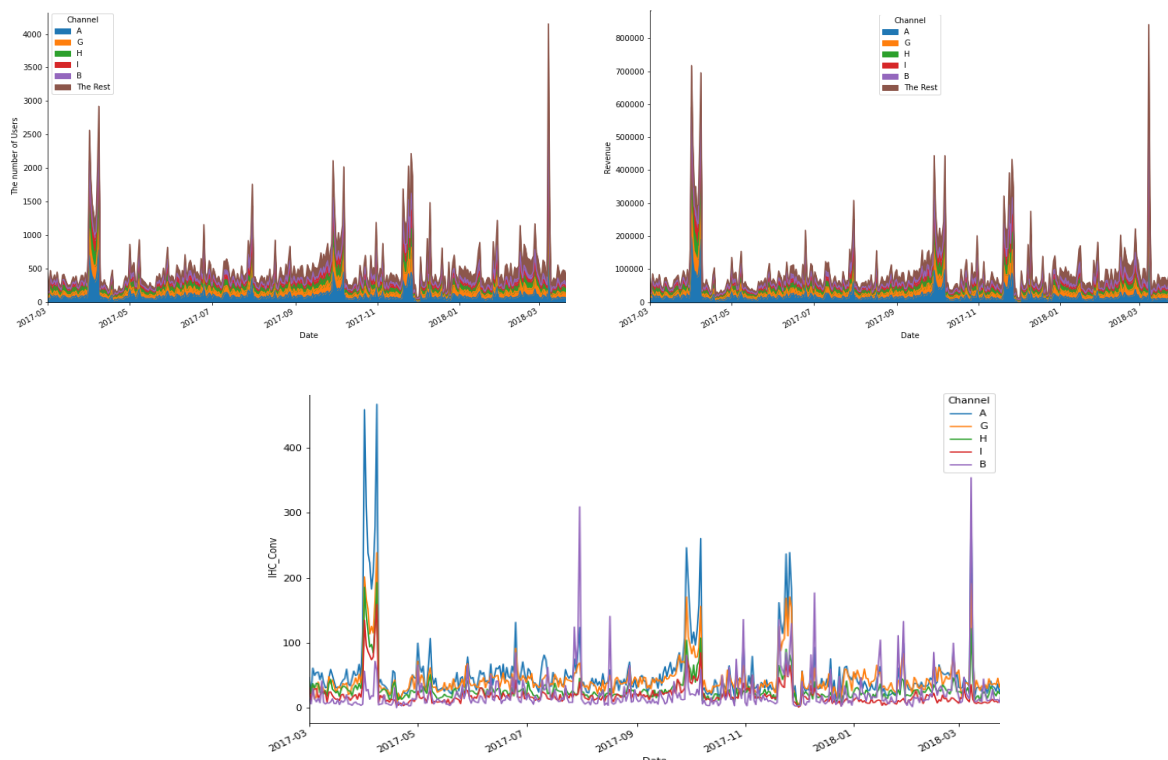


Figure 2 above presents the total annual contribution of over 20 Online Marketing Channels to the number of users, conversions, and revenue. Accordingly, the A channel attracts the highest number of users. Thus, it leads to the highest number of conversions and revenue. The G channel is ranked as the second, which is followed by Channels H, I, and B, respectively. The 17 remaining Online marketing channels give an insignificant contribution. Indeed, their contribution accounts for around one fourth.

The first two panels in Figure 3 below shows the influences of the top five online marketing channels on the daily number of users and daily revenue. Accordingly, the A channel still shows the highest impactS on both the daily number of visits and daily revenue. The G channel gives the second biggest contribution to these two interesting KPIs. The H, I, and B channels take the third, fourth, and fifth positions, respectively. The rest belong to the 17 remaining online marketing channels.

The bottom panel in Figure 3 shows the change in the daily attributed conversion fraction (IHC) of the top five online marketing channels. Accordingly, these fluctuations of these indicators are identical to the changes in the daily number of visits and daily revenue. It implies the great influences of top five channels on these two KPIs.

Figure 3: The impacts of the Online-Marketing Channels on KPIs over the Period of Time



3 Conclusion Remarks

Based on the simple analysis above, I find that the five online marketing channels, such as A, G, H, I, and B, have the most notable impacts on KPIs, including the number of visits, fraction of return customers, and revenue. On the other hand, the remaining online marketing channel gives an insignificant influence on KPIs.

Computer Programming

A general process is briefly summarised as follows. First, two different datasets were directly downloaded from the Github repository. These different datasets then emerged into one. The Exploratory Data Analysis (EDA) was conducted after cleaning data, such as time format, missing data. On the other hand, the cleaned data was loaded to the SQL database for future uses.

Indeed, to do these Extract Load Transform (ETL) and Exploratory Data Analysis (EDA) processes, I wrote an Object-Oriented Programming (OOP) with Python^a. I also combine Python script with Tableau by the Tabpy package. For visualization, as an example, I used not only a number of python libraries, such as Matplotlib, Seaborn, Plotly, but also Tableau. However, visualization outcomes are not significantly different among these tools.

^a It can be downloaded from my Github repository <https://github.com/phuongvnguyen/Business-Intelligence-Online-Marketing>. It is worth noting my Python script was produced in the Colab environment. Thus, it might not run well on a local Anaconda.