Vodafone UK - Facebook Customer Interaction Analysis

(Term Project)

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1. INTRODUCTION

Traditional interaction between companies and customers became unacceptable with the revolution of social media. Expecting service only by telephone, calling the service with or without success, long waiting times, unsuccessful communication with representatives, unavailability of tracking the status are old fashioned and bring negative customer experience. It's not a surprise to expect service on social media, especially by younger generations, while so many people are active on social media channels [1].

"According to the 2012 American Express Global Customer Service Barometer, two thirds of surveyed consumers are willing to spend more with a company they believe provides excellent customer service, and three out of four consumers surveyed confirm they have spent more with a company because of a history of positive customer service experiences (like Zappos, Amazon.com)." [4]. Organizations should stay away from traditional approaches and listen to the customer demands of modern era. It's essential for big companies to have social media accounts and to keep it active.

As Vodafone, we always appreciate the up-to-date methods of data analysis to be able to catch-up new trends, in line to have a good communication with our customers and making them feel special with our continuous customer value development.

Vodafone is a global brand giving service in 26 countries, up to 50 countries with partner networks [6]. This brings a big responsibility to keep a good communication with over 300 million customers all around the world.

Vodafone is a very active brand in social media. That's why, this project is focused on social media customer interaction of Vodafone, and the source will be Vodafone UK to be able to use data in English and Facebook channel is focused on.

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2. FACEBOOK CUSTOMER INTERACTION OF VODAFONE

2.1 Vodafone in Social Media

Vodafone UK has several twitter channels for sharing campaigns, any/expected network failures, news and customer support. According to Samuel Hall, the head of social media communications at Vodafone UK, "It's not about dialing a number and getting put in a queue. It's not like sending an email and waiting for a reply; it's very, very quick." [2]. Even this statement is made 3 years ago, the customer service in social media has been growing ever since, and more companies are diving in Twitter.

There are several reasons for why twitter is much better than telephone services [5];

- It's a much cheaper option than telephone, you just need a computer and a desk, and a nice interface to track all the questions and be able to answer them all.
- It doesn't keep agents occupied for lots of minutes, easier to reply. Gives agents breathing space between the communication and resolving.
- It's quicker and more transparent. It's possible to track entire communication, and helps other customers which might have the same problem.
- Gives a positive brand image with friendly answers, makes customers think about the brand is there and caring for them.

The list goes on and it's a great achievement that Vodafone is using it for years in different countries. Customer feedbacks are regularly collected and analyzed by Customer Experience departments, regular researches are scheduled frequently, feedbacks are collected per email campaign, the deals, jobs, news are always shared by social media.

2.2 Project Description

2.2.1 The Scope Of Project

The official Facebook channel of Vodafone UK is: https://www.facebook.com/VodafoneUK. 5 different scripts are created for this project, and by running them one by one, 3 different csv datasets (posts by page, comments on posts and reactions on posts), graphic analysis and lists are created.

Scripts are stored in Gitlab under: project-009/tree/master/code

Created datasets are stored in Gitlab under: project-009/tree/master/data

2.2.2 *Software Description*

The software has 5 python scripts which are fetching data from Facebook, creating csv files with retrieved data and reading/analyzing. Starting by scripts;

01 get data: For this script, most important thing is creating an Access Token from Facebook for Developers platform before starting. A quick guide for how to do:

- Go to https://developers.facebook.com and login with your Facebook account.
- Add a new app
- Copy the App ID and App Secret, join them with pipe ("|") and write it into the code.

I've already created an access token for this project, and this is the first hard coded value of the script. It won't be used anywhere else, and I'll terminate it after the term is ended. Normally, those codes shouldn't be shared for security reasons.

This code has 2 hardcoded values in total, and the second one is page name (or page id also can be used). The page name we're going to analyze is 'VodafoneUK' or the numeric id of page is "67884984384". You can use different page id's or names to analyze different pages.

After applying access token and the page name which we're going to analyze, you can run the script. It'll create 2 csv files, one with the last 25 posts of the page with several columns (*post results.csv*), other one is the link for next 100 posts (*post links.csv*).

02 append data.py: This code reads the csv for next link, and every time you run this code, it appends the next 100 post to *post results.csv* file. It also updates the *post links.csv* with new links. The data formatting is also done in this step.

For example, if you run **01 get data.py** 1 time and **02 append data.py** 2 times, you'll have 25+100+100 = 225 rows in your *post results.csv* file. If you run **01 get data.py** anywhere in the middle, it'll restart the process and you'll be back to 25 records. The data formatting is also done in this step.

03 comment links.py: This code has 1 hard coded value, "page id", which is explained it in script 01. Script gets all the comments by followers or page, made to the posts in *post results.csv* and writes them into *comment results.csv* file. The data formatting is also done in this step.

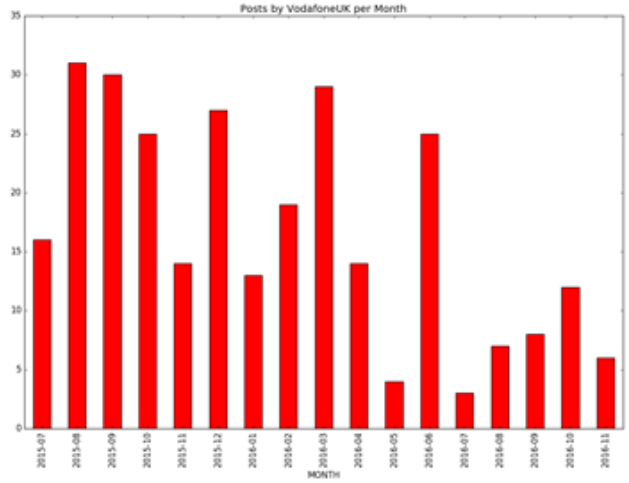
04 reactions links.py: Gets all the Facebook reactions by followers made to the posts (like, love, angry etc.) in *post results.csv* and writes them into *comment results.csv* file.

05 data analysis.py: Does the analysis on comment, post and reaction results.

2.3 Outcomes of the Project

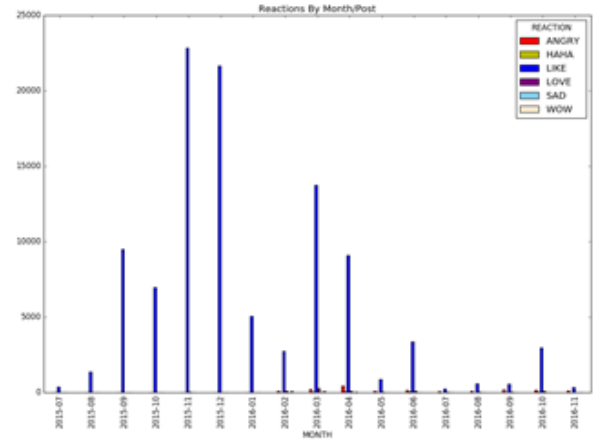
My first dataset (posts) contains 325 posts sorted by date (newest to oldest). It's created by **01 get data.py** to run 1 time, and **02 append data.py** to run 3 times. It's named as *post results.csv*.
By analysis script (*05 data analysis.py*), I'm merging 3 files together (on post id) and I'd like to see some trends.

ax0 and **pivvo0** are creating a graph and saves as *p0 posts by time.png*. This is showing the number of posts by page per month. We see a big dropdown in posts in 2016 comparing to 2015 (Figure 1).



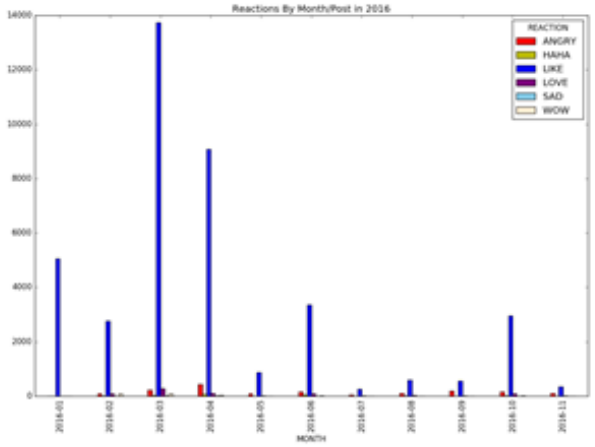
: Figure 1: Posts by VodafoneUK per Month

ax1 1 and **pivvo 1 1** are creating a graph and saves as *p1 reactions by time.png*. By this graphic, we don't really see a big reaction to the large amounts of posts in last autumn 2015 (Figure 2). Customers are usually reacting in early winter, spring and June, possibly due to holiday seasons. Which means, good interactions, campaigns and deals on Facebook page on holiday seasons will bring good feedback and customer experience.



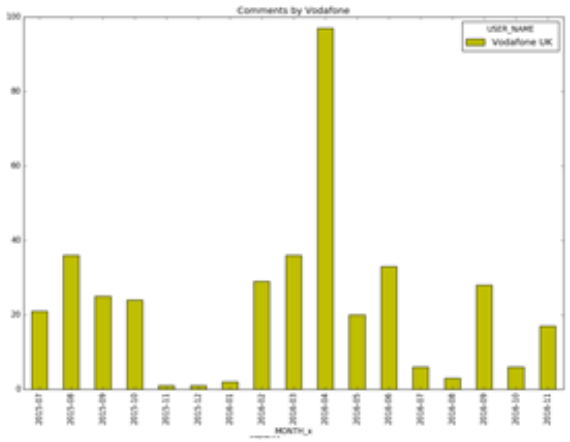
: Figure 2: Reactions by Month

In February 2016, Facebook launched different reactions, which can be seen in previous graph. I'd like to see them closely by selecting only 2016 (**ax1 2** and **pivvo 1 2**, saved as *p1 reactions by time 2016.png* (Figure 3).



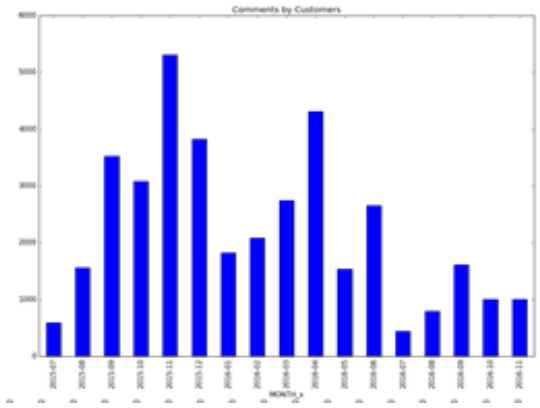
: Figure 3: Reactions in 2016 by Month

This is a good sign, that the amount of "LIKE"s looks like prior of the reactions. However, we can see some "ANGRY" reactions, especially in April and September. Let's look at the comments by VodafoneUK user by time, to see if those customers are contacted by Vodafone **ax2** and **pivvo2**, saved as *p2 comments by vodafone.png* (Figure 4).



: Figure 4: Comments by Vodafone

As you can see in Figure 4, the highest amount of comments by Vodafone happened in April 2016, parallel to the amount of "ANGRY" reactions. By this, we can say that Vodafone is interacting with customers to help and solve their problems, by making an active conversation in a public environment. This also creates a transparency between company and customer, and other followers are also able to see that they can actually reach representatives from this platform, and get help.
As you can see in Figure 5, the number of all comments are usually high in holiday seasons, parallel to Figure 1, the count of posts per month. It's calculated by **ax3** and **pivvo3**, saved as *p3 comments by customers.png*. It's also high on April 2016, which is the highest period that Vodafone is also interacted.



: Figure 5: Amount of All Comments per Month

The analysis can be extended with several graphs, from different approaches. Since we have the texts of posts and comments, we can also do some text mining. In my sample dataset, I have nearly 40k comments with hundreds of thousand words. I'd like to see which words are used the most, to be able to pick the topics customers are highly communicating in.

This code is very open to improvements (**pivvo5**), since it's a word counter, it gets the most common words in English first (like I, am, but, to, the etc.) which needs to be eliminated. My picking from top words, which can be focused on:

- **Service / 11807 times**:
This is highly representing a problem in service. Those customers should be focused with their problem, needs to be communicated and be in touch to fix their problems.

- **Contract / 7664 times**:
This is highly representing a negative satisfaction with the contracts. Those customers are retainable, and if Vodafone wants to keep the customers after their contract is ended, they need to be satisfied with good deals.

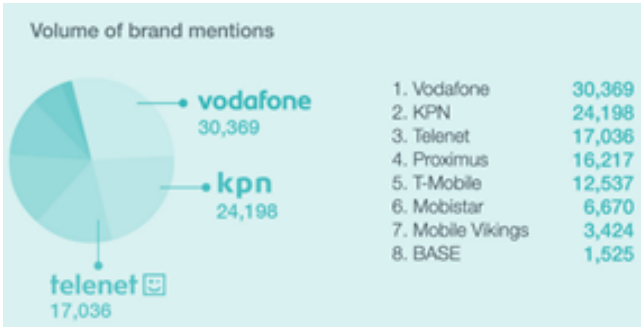
- **Never / 4894 times**:
This is highly representing some comments like "I never choose Vodafone again". Which are the unsatisfied customers. They need to be satisfied.

- **Money / 4123 times**:
This is highly representing the prices. Those customers should be actively informed about good deals and discounts.

Those examples of words needs to be focused closely by customer engagement departments. When you eliminate the irrelevant words from selection, get a subset of words, you'll deep-dive and reach to the core of data.

3. CONCLUSION

With 5 graphics and word analysis, we can come to a conclusion that Vodafone is maintaining a good engagement with customers on Facebook.
According to the case study which is done for Netherlands [3], the top engaging and mentioned mobile telecommunication of the country is Vodafone (Figure 6).



: Figure 6: Volume of Brand Mentions

: Figure 7: Top Engaging Brands

Since Facebook is not the only social media account of Vodafone, the brand is also active in Twitter, LinkedIn, Youtube etc., it's obvious that the transformation from traditional customer engagement to social media is up to date. Following the trends of modern era and not being stuck in old fashioned methods are the primary keys for worldwide brands to survive.

4. REFERENCES

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