Bilkent University

Department of Computer Engineering

Senior Design Project

Brandlyzer: Web Based Analyzis Systems

Project Specification Report

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Web Page: www.tunahankuntt.wix.com/brandlyser

Project Specification Report
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1 Introduction

In today's world, gathering information on internet before doing an activity becomes popular and reliable. Almost every brand in the industry need to be informed about their reputation. However, every day people complain different parts of their life to the world through internet such as social media, blogs, web sites etc. They complain about where they go, the quality of the product that they buy, their feelings and opinion about almost every topic. They also comments each other's complaints. That creates a huge amount of data on the internet. That huge amount of information awaits and ignores because of mess on the internet. Since that data is not classified or listed. To reach information about reputation of brand, that data need to be collected and classified according to the specific topic to be use in the industry.

Automobile industry in one of the topic that people mostly talk about on the internet. Brandlyser aims for gathering information about that brand and that brand's model via using Twitter and Facebook posts, using comments under the commercial videos and related other videos in YouTube, posts on the some popular Blogs and some complaints Blogs. Program synthesis that data then gives analyzes with statistic of market place of that brand on the internet.

1.1 Description

Brandlyzer is a web - based application that helps user to analyze brand values and comparisons through the view of customers on the Internet.

Brandlyzer has a brand description screen. In that screen, Brands products, industries, mottos and their competitors are entered manually. These creates keywords. Then according to keywords, data are gathered from different web pages on the Internet. Also that data are classified as their types, such as social media data, commercial data, blogs data etc.

During collecting of data, texts automatically enters our system which will design and analyze these texts. Our algorithm fundamentally will do sentimental analyzes and will utilize superlatives in the text for comparison of brands. Other part of the algorithm will do text mining and sentimental analyzes to find user opinions about topic and will turn them into a statistical chart.

Finally, Brandlyzer will give result of these analyzes in a dash box. Dash box, will be a page which is divided into smaller boxes and every box gives a unique part of web site analyze in a general form. To illustrate that, one box gives result of analyzes about YouTube commercials data and other box gives the result of analyzes on the social media data. Figure 1 is the mock-up image of dash box. Dash box also contains a general analyzes which are combined with all little boxes.

After clicking that small box in the dash box, the new page will be opened and that gives more detailed analyze report of that web page. The detailed analyzes includes people's opinion ratio of specific attributes of that brand such as, for an automobile company that attributes are price, comfort,

performance etc. We will seek ways to incorporate topic modelling algorithm to achieve this. That page will give more specified analyzes about mostly said model of that company and statistic about that model.

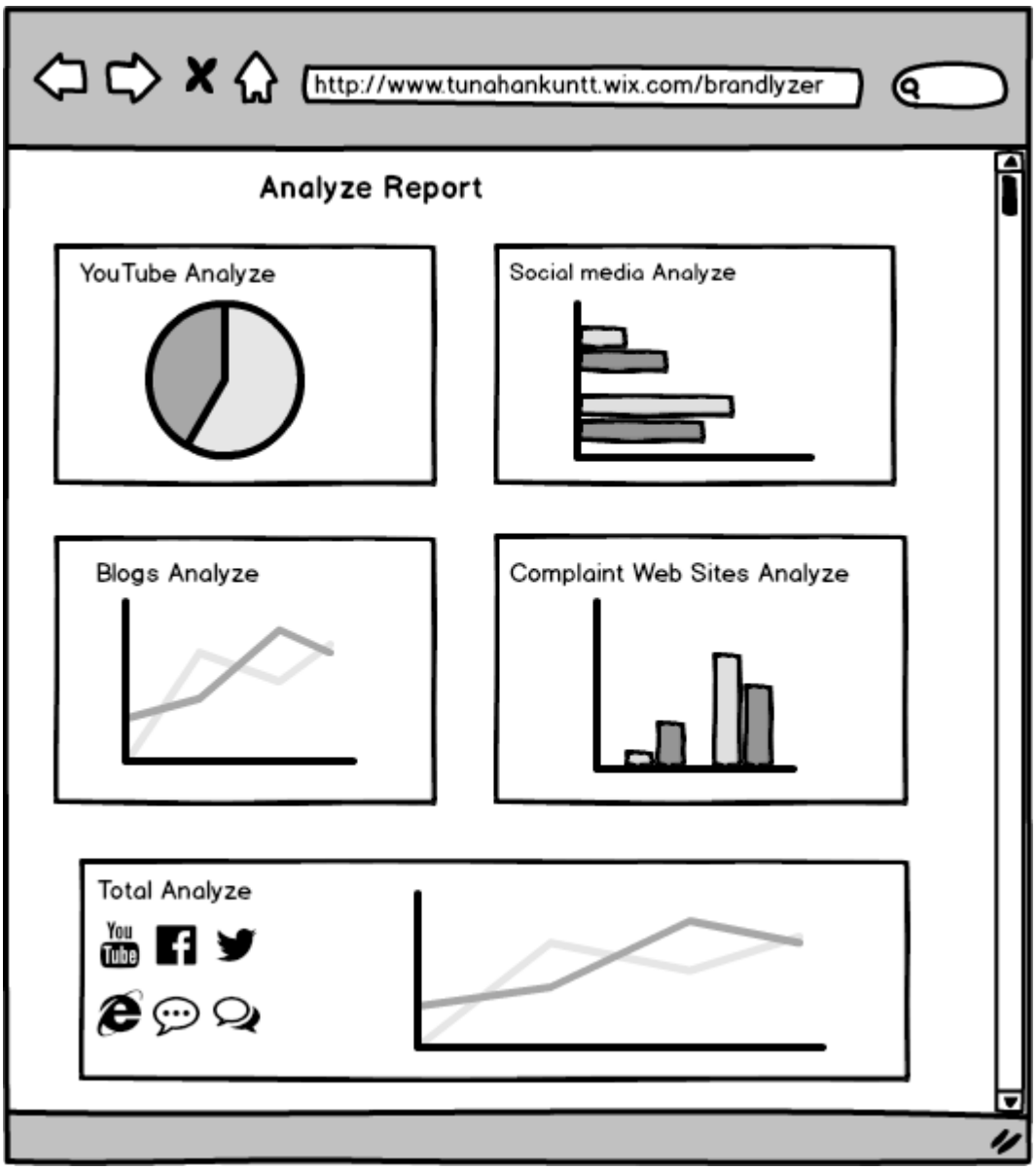

Figure 1: Mock-up of Dash Box

1.2 Constraints

1.2.1 Economic Constraints

This project will use the comments that will be found in specific web-sites. Unless there is a restriction the information that sides provide is free. Also we can use some text-mining tools to review the information we get from this sides. These tools are also free. We will serve our findings in a web-site there will be cost for this domain.

1.2.2 Ethical and Legal Constraints

The feature and extensibility of our project will be carefully planned to not break any kind of rules. We will use the information in the web which is open to anyone so there shouldn't be any problem with the information we get. Also we will be careful about the web-sites we get information from in order to get their information legally.

1.2.3 Sustainability Constraints

With the help of our customers' reviews we can make our project more user-friendly and efficient. We can change or expand our search areas according to customers' demands. Also we will constantly repeat the search to see how the reputations of our costumers change. So our project should be open to change.

1.2.4 Security Constraints

The information we will use is open to anyone so there is no restriction about security.

1.2.5 Time Constraints

The project will be fully implemented and tested by the end of spring 2016.

1.2.6 API Constraints

Brandlyzer will use Facebook, YouTube and Twitter API's for fetching data. However they have limits for overuse of their APIs by rate limits. For example, twitter allows you to search 180 times in a 15 - minute period [1].

1.3 Professional and Ethical Issues

1.3.1 Teamwork:

Our project team has 4 Computer Engineering students. Everyone will be responsible for a part of project. In a team project, project members need to have a good communication. Establishing this communication can make us ready for business life. Also we will gain experience about how to make process and share works in a team project.

1.3.2 Target Audience:

As it is same in business life, the most important issue of this project is about target audience. If you have a product with no user, your work is not efficient. So we need to focus on users. Our audiences can be any product with brand. We will test their popularity and attraction around internet. At the end of this research, brand owner will have a good idea about popularity and complaints of their products.

1.3.3 Reliability:

Our first aim is to create reliable product. Brand owners need to learn their product's popularity and depend on this research, they will manage selling process. So we need to minimize the error margin as we can. In order to accomplish that, we need a reliable algorithm and to search lots of data.

1.3.4 Ethical Issues:

The main ethical issue of this project is justice. Every brand including competitors can take a report by this software in order to manage their popularity. No company has a privilege about reports. If two competitor brand ask for reports, we need to give reports for their brand objectively. We cannot be a supporter of one brand among a sector. We must not try to change competition by our reports. Reports' purpose is to give an idea to all competitors companies.

1.3.5 Professional Issues

Security is another significant issue in our product. We need to guarantee that third party software cannot access our data as it will take a crucial role in brand's' future plans.

2 Requirements

2.1 Functional Requirements

- Brandlyzer will have two levels of access: client level access and administrator level access.
- Client level access provides required reports to customers.
- Administrator level access provides activating or deactivating of any module for any customer.
- Brandlyzer needs a login system for authorization. It will be doing by password.
- Brandlyzer will provide different modules for different customers.
- Brandlyzer will be a web-based application.
- Brandlyzer will use YouTube, Social Medias APIs and many web sites for fetching data.
- Machine learning algorithms will be used for decreasing error rate of analyzes.
- Topic modelling algorithm will be used for determine topics of texts.
- Superlatives will be used in a reliable algorithm and catching superlatives in texts will give result us about comparison between brands.
- Brandlyzer collects processed data and by classifying this data, it will show a proportional popularity of brands.
- Brandlyzer will show the statistics of analyzed data as a graphic and chart.
- If clients desired to have their rivals' data, it will be fetched, analyzed and reported.
- Job scheduler will be used for constant fetching, analyzing and reporting processes.

- System will close clients' accounts when they do not make payment on time.
- Turkish and English languages will be supported in the first version of our software.

2.2 Non-Functional Requirements

- The system will consist of user-friendly interface for usability of Brandlyzer. Elegant design of Brandlyser one of the most important features of our software.
- Brandlyzer needs an internet access to work correctly.
- Brandlyzer will be reliable.
- Control mechanism of Brandlyzer will have low response time and fast transition between pages.

2.3 Pseudo Functional Requirements

- Implementation of Brandlyzer will be done in Java for back-end development (analyze of data, API connections etc.)
- Some of the graphic objects will be designed using Adobe Photoshop CS4.
- As Brandlyzer will be web based application, our application will be compatible with most of the operating systems.

3 References

[1] Dev.twitter.com, 'Rate Limits: Chart | Twitter Developers', 2015. [Online]. Available: https://dev.twitter.com/rest/public/rate-limits. [Accessed: 9- Oct- 2015].