**Integrating Digital and Traditional Marketing**

By Blue Ocean Whale Sharks



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| **Revision History**   |  |  |  |  | | --- | --- | --- | --- | | **Name** | **Date** | **Remarks** | **Version** | | Blue Ocean Whale Sharks | 30/06/18 | Initial Requirements Specification | 1 | | Blue Ocean Whale Sharks | 10/12/18 | Reformation of Roles and Specification | 1.1 | | Blue Ocean Whale Sharks | 02/02/19 | Final version of Requirements Specification | 2 | |

**Arun BASHETTY – Quentin DEROSIN – Amaury JULIEN – Qiaoyu LIU - Antonis TODORIS**

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# Background information

The project aims to provide useful information for marketing professionals that can lead to better decision making and to help create marketing plans to maximize the impact and return on investment. The ownership of the project is held by EPITA, under the supervision of Bill Manos. To conduct research, analyze and provide a summary of the reasons behind the trends in the market.

# Vocabulary/abbreviations/conventions

**Datasets:** A collection of data that provides information.

**Omnichannel:** Omnichannel is a cross-channel business model and content strategy that companies use to improve their user experience.

**Meta-physical:** Here we are talking about the products which can be marketed, digital and physical marketing in synchronization.

**CSV:** A comma-separated values (CSV) file is a delimited text file that uses a comma to separate values. CSV file stores tabular data (numbers and text) in plain text. Each line of the file is a data record. Each record consists of one or more fields, separated by commas.

**Representational State Transfer (REST):** is an architectural style that defines a set of constraints to be used for creating web services. Web Services that conform to the REST architectural style

**Python Packages:** A package is a special arrangement of the folder plus modules to enable a particular functionality.

**Google Trends:** Google Trends is an online search tool that allows the user to see how often specific keywords, subjects and phrases have been queried over a specific period of time.

# Product overview

The Project is based on google marketing trends that combine traditional/physical and digital marketing. Analyze the reasons and demographics for the growing interest and return of statistics of different methods of analogue and digital marketing. The product will provide feedback and useful information of what marketers need to consider when developing marketing plans to maximize the impact and return on investment.

The proposed system is an extension of “pytrend” with a graphical user interface that allows the user to predict an estimation of which will profitable to run a digital or non-digital operation to establish a new marketing campaign. It will be a desktop application that using Google APIs to fetch data online and provides a set of matching information based on the search keyword that should be input. This application and analysis tool with many features based on the analysis of the inputs given by the user, our software will provide feedback and ideas for the potential marketers to prepare the market plans for their products.

Based on the analysis, we will provide two different lists of marketing trends by the country chosen:

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| **Analogue Marketing** | **Digital Marketing** |
| Business Card | Social Media use: Facebook, Twitter etc. |
| Fliers | Email Marketing |
| Billboards | Radio Advertising |
| Postcard | Television Advertising |
| Bus Shelter Ads | Video Marketing |
| Print Ads | Google, Yahoo, Bing Search engine Marketing |
| Newspaper | Mobile Marketing |

# Team Members and responsibilities

|  |  |  |
| --- | --- | --- |
| **Project Manager and Software Developer** | TODORIS | Antonios |
| **Full-Stack Developer** | LIU | Qiaoyu |
| **Research and Software Support** | BASHETTY | Arun Kumar |
| **Front-End Developer** | DEROSIN | Quentin |
| **Back-End Developer** | JULIEN | Amaury |

# Target market and users

The project is aimed at delivering market trends around the world for the marketing professional or a product owner intended. The project will address the potential clients for a product and provide a detailed description in terms of the product they want to promote, country and marketing trends for this country in text and graphical format. This project is intended to do basic decision making and provide a set of recommendation.

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| --- |
| **User Story** |
| As a user, I want to input the product I want to promote and the specific country in order to get information about the combination of this information. |
| As a user, I want to get information bar charts for the marketing trends in specific countries in order to decide how to approach my marketing campaign. |
| As a user, I want to read some analytical text made by the application in order for me to decide the best marketing solution. |

# Detailed product description

## Content / Data

A desktop application that takes the following input from the user:

1. **Product Category:**

The user will select a relevant product category from the list, Art & Entertainment, Computer/Internet, Education, Food/Wine/Cooking and so on.

1. **Product Description:**

The user will enter a free text description of the products, our program will perform text mining to identify the patterns that will help in providing the trends.

1. **Type of the product:**

The user will provide the type of the product as a Physical or Digital product.

1. **Online or Offline product:**

For digital platform, the user will select if product features are accessible in offline mode (without internet connectivity).

1. **Location:**

For a physical product, the user will provide the location of the store or manufacturing unit.

1. **Countries to market:**

The user will select a single country to market the product.

1. **Location:**

The software will be able to provide geographical details as well as comparison with other locations.

## Software

* **NumPy** stands for Numerical Python. The most powerful feature of NumPy is an n-dimensional array. This library also contains basic linear algebra functions, Fourier transforms, advanced random number capabilities and tools for integration with other low-level languages like Fortran, C and C++.
* **SciPy** stands for Scientific Python. SciPy is built on NumPy. It is one of the most useful libraries for a variety of high-level science and engineering modules like discrete Fourier transform, Linear Algebra, Optimization and Sparse Matrices.
* **Matplotlib** for plotting a vast variety of graphs, starting from histograms to line plots to heat plots. You can use Pylab feature in ipython notebook (ipython notebook –pylab = inline) to use these plotting features inline. If you ignore the inline option, then pylab converts ipython environment to an environment, very similar to Matlab. You can also use Latex commands to add math to your plot.
* **Pandas** for structured data operations and manipulations. It is extensively used for data munging and preparation. Pandas were added relatively recently to Python and have been instrumental in boosting Python’s usage in data scientist community.
* **Scikit Learn** for machine learning. Built on NumPy, SciPy and matplotlib, this library contains a lot of efficient tools for machine learning and statistical modelling including classification, regression, clustering and dimensionality reduction.
* **Stats models** for statistical modelling. Stats models is a Python module that allows users to explore data, estimate statistical models, and perform statistical tests. An extensive list of descriptive statistics, statistical tests, plotting functions, and result statistics are available for different types of data and each estimator.
* **Seaborn** for statistical data visualization. Seaborn is a library for making attractive and informative statistical graphics in Python. It is based on matplotlib. Seaborn aims to make visualization a central part of exploring and understanding data.
* **Pycountry** To get the product trends from based on the Country, state and city.
* **Bokeh** for creating interactive plots, dashboards and data applications on modern web-browsers. It empowers the user to generate elegant and concise graphics in the style of D3.js. Moreover, it has the capability of high-performance interactivity over very large or streaming datasets.
* **Pytrends** Allows simple interface for automating downloading of reports from Google Trends. The main feature is to allow the script to login to Google on your behalf to enable a higher rate limit.
* **PyQt5** is a [Python](https://en.wikipedia.org/wiki/Python_(programming_language)) [binding](https://en.wikipedia.org/wiki/Language_binding) of the [cross-platform](https://en.wikipedia.org/wiki/Cross-platform) [GUI](https://en.wikipedia.org/wiki/GUI) toolkit [Qt](https://en.wikipedia.org/wiki/Qt_(toolkit)), implemented as a Python [plug-in](https://en.wikipedia.org/wiki/Plug-in_(computing)). PyQt is [free software](https://en.wikipedia.org/wiki/Free_software) developed by the [British](https://en.wikipedia.org/wiki/United_Kingdom) firm Riverbank Computing. It is available under similar terms to Qt versions older than 4.5; this means a variety of licenses including [GNU General Public License](https://en.wikipedia.org/wiki/GNU_General_Public_License) (GPL) and commercial license
* **Blaze** for extending the capability of NumPy and Pandas to distributed and streaming data sets. It can be used to access data from a multitude of sources including Bcolz, MongoDB, SQLAlchemy, Apache Spark, PyTables, etc. Together with Bokeh, Blaze can act as a very powerful tool for creating effective visualizations and dashboards on huge chunks of data.
* **Scrappy** for web crawling. It is a very useful framework for getting specific patterns of data. It has the capability to start at a website home URL and then dig through web-pages within the website to gather information.
* **SymPy** for symbolic computation. It has wide-ranging capabilities from basic symbolic arithmetic to calculus, algebra, discrete mathematics and quantum physics. Another useful feature is the capability of formatting the result of the computations as LaTeX code.
* **Requests** for accessing the web. It works similar to the standard python library urllib2 but is much easier to code. You will find subtle differences with urllib2 but for beginners, Requests might be more convenient.
* **Tkinter** is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit and is Python's de facto standard GUI.

## User Stories:

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| **User Story** | **Software Feature** |
| As a user, I want to input the product I want to promote and the specific country in order to get information about the combination of this information. | The application will provide with a textbox to input the product name and a dropdown list for the country choice. |
| As a user, I want to get information bar charts for the marketing trends in specific countries in order to decide how to approach my marketing campaign. | The application will provide with a tab of bar charts analytics of different methods of analogue and digital marketing that are trending on this country by using google trends. |
| As a user, I want to read some analytical text made by the application in order for me to decide the best marketing solution. | The application will also provide a percentage of analogue and digital use of marketing in this country so that the user can decide the best possible way to start his campaign. |

## Back-office (editing and administration) tools

The user must input a series of information, i.e. the input to the program, the input fields will be a text box or drop-down or radio buttons and the user does not require to install any editing tools.

## Payment system and user authentication

Payment system and user authentication are not in the scope of development.

## Adverts

Website monetization is not in the scope of development.

## Graphic design guidelines

Following are the components of the GUI:

1. **Input tab:** This is the in the main screen of the project which will provide a set of operation performed by the user. The components are divided into different tabs based on the functionality.
2. **Data Marketing tab:** This tab allows the user to provide information about the product he/she wants to promote mentioned in section “Detailed product description - Content/Data”. Also on this tab, there will be a text label providing useful statistics in text and proposing the best possible way to kickstart the marketing campaign in this specific country and product.
3. **Graphs and plots tab:** In this tab, the user will able to view the results in graphs and plots format of the ways marketing is trending on this specific country as well as the results of the product searched online.

## Accessibility

The requirements for compliance of the product with accessibility standards is not in the development scope.

## Target platforms and configurations

The software would be a desktop app and would be supported by Windows and MacOS. So, the minimum requirements would be an Operating system with Windows 7 or later with I5 processor or a MacOs with I5 processor.

## Performance

The software is a desktop-based application, the performance will be dependent on the size of the dataset.

# Testing and acceptance

Following are the phases considered as part of testing the software:

1. **Test Planning:** Based on the overall requirement and user stories mentioned in section “Detailed product description-Software”, test plan will be developed by the team and will be review by the Project Owner.
2. **Test Case Development:** Based on the planning, the overall system testing is divided into test cases.
3. **Test Execution and Documentation:** In this phase, all the test cases will be executed one by one and the test results will be documented with the screenshots of the developed system.
4. **Final Acceptance Testing:** In this last phase of testing, the overall system will be tested in terms of compliance with the requirements.

# Training

After the completion of development and testing, a Project User Guide document will be created to help the user interact with the system. The user guide will contain all the necessary steps to perform various operations.

# Schedule and milestones

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| --- | --- |
| Dates | Milestone |
| 13-07-2018 | Motivational Letter and Proposition |
| 18-07-2018 | Project Approved by Bill Manos |
| 24-09-2018 | Team Name Approved |
| 08-10-2018 | Requirement Analysis |
| 23-10-2018 | Follow up with Bill Manos |
| 13-11-2018 | Team Logo Approved and Follow up with Bill Manos |
| 11-12-2018 | Team Roles Changement |
| 21-01-2019 | Completion of Back-End Development |
| 31-01-2019 | Completion of UI |
| 04-02-2019 | Poster Completion and Report |

# Risks, dependencies and other issues

The output is dependent upon the availability of the dataset provided by pytrends, in case if the dataset for a product is not available, the software will give no information as the output. As input, the user must provide a series of information, in some cases user might not be able to answer all the question related to the product (under development to solve this problem).