Software Requirements Specification

for

Market Research Survey Tool

**Version 1.0 approved**

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**Table of Contents**

**Table of Contents**

**Revision History**

**1. Introduction**

1.1 Purpose

1.2 Document Conventions

1.3 Intended Audience and Reading Suggestions

1.4 Product Scope

**2. Overall Description**

2.1 Product Perspective

2.2 Product Functions

2.3 User Classes and Characteristics

2.4 Operating Environment

2.5 Design and Implementation Constraints

2.6 User Documentation

2.7 Assumptions and Dependencies

**3. External Interface Requirements**

3.1 User Interfaces

3.2 Hardware Interfaces

3.3 Software Interfaces

3.4 Communications Interfaces

**4. System Features**

4.1 User Opens Survey

4.2 User Takes Survey

4.3 User Completes Survey

4.4 A User Logs In

4.5 A User Changes Their Password

4.6 Make New Survey

4.7 Open Existing Survey

4.8 Add Question/Checkpoint to Survey

4.9 Edit Existing Survey Question

4.10 Remove Question from Survey

4.11 Save Changes to Survey

4.12 Mark Survey Ready to Review

4.13 Select Survey to View Statistics

4.14 Select Question to View Statistics

4.15 Select Statistics

4.16 Export Survey Results

4.17 Create Account

4.18 Edit Account

4.19 Remove Account

4.20 Mark Survey Reviewed

4.21 Publish Survey

**5. Other Nonfunctional Requirements**

5.1 Performance Requirements

5.2 Safety Requirements

5.3 Security Requirements

5.4 Software Quality Attributes

5.5 Business Rules

**Appendix A: Glossary**

**Appendix B: Analysis Models**

**Appendix C: To Be Determined List**

**Revision History**

|  |  |  |  |
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|  |  |  |  |

# Introduction

## Purpose

XYZ Market Consultants, Inc. is a market research company that currently uses free third-party tools, such as SurveyMonkey, to help clients design surveys and analyze the results. The main goal is to provide XYZ Market Consultants with a new platform to replace the existing system for collecting, analyzing, and reporting data to their clients. A key attribute for this new platform is the integration of conjoint trade off questions, to better identify the values of the customer.

## Document Conventions

* Use Cases and functionalities of the program are separated by user role.
* Large bolded words followed by numbers represent sections and subsections.
* Bolded words without numbers represent keywords in the section.
* Italicized words represent comments to the reader.

## Intended Audience and Reading Suggestions

This document contains our plan to provide XYZ Market Consultants with a new survey tool platform to replace their existing system. It is to be used as a guide containing the necessary components of the project and how they interact with each other.

This document is intended for the following readers:

**Project Managers:** Those who plan, design, and oversee the developers as time goes on. They will use this document to prioritize the requirements and plan for development, while making sure to deliver an acceptable product to the client.

**Software Developers:** Those who are responsible for implementing the requirements. They will use this document to ensure that the scope and functionality of each requirement is met.

**Users:** The people who will be using the finished product

**Survey Designers:** Create questions and specify question branching logic

**Survey Data Analysts:** Analyze data and present results for executive use

**Executive Users:** Make business decisions based on the results of the data analysis

**Administrators:** Oversee the survey deployment and results

**Participants:** View and take the surveys

**Testers:** Those who are responsible for confirming that finished product contains the requirements, and that that the key functionality is not jeopardized as new builds are released and new requirements are introduced.

While reading this document, it is suggested that each reader start at the beginning with the overview sections to gain an understanding of the main goals and functionalities of the product (*Sections 1, 2*).

It is then suggested that **Project Managers** read (*Sections 3, 4, 5*), and assign and direct their **Software Developers** to read the requirements they are responsible for (*Sections 3, 4, 5*).

**Testers** will are also encouraged to read about the requirements they are confirming (*Sections 4, 5*).

Users are encouraged to read about how they will be using the product, specified in the following sections: **Survey Designers** (*Sections 4.6 - 4.12, 4.21*), **Survey Data Analysts** (*Sections 4.13 - 4.16*),

**Executive Users (***Sections 4.20 - 4.21*), **Administrators (***Section 4*), **Participants** (*Sections 4.1 - 4.3)*

All readers are highly encouraged to consult *Appendix A, B, and C* to alleviate terminology questions that may arise while reading this document and visualize the processes in diagram representations.

## Product Scope

* The initial release will be a web market research survey tool which will allow you to collect, analyze, and report data to your clients.
* Survey designers will be able to customize a survey by choosing the number of questions, deciding the format/type of each question, and specifying the question flow logic.
* Survey analysts will be able to view the data and significant statistics from each data set that is collected from the surveys and can make visual models of each data set.
* Survey analysts will be able to perform linear regression on subsets of data.
* Visual models of the data will be provided in a way that may allow business executives to make well informed decisions.
* Administrators may be able to oversee the survey deployment and view the results.
* Survey participants will be able to take the surveys. The survey experience may be different for each participant, as the question flow logic may be determined by their previous answers.

The market research survey program will have the following limitations:

* Survey question content will still be entered manually.
* Survey Designers will only be able to choose from the following question templates: radio button, check boxes, drop down menus, free response, rating, constant sum, ranking, and conjoint trade-off questions.
* That data analysis tools will only provide statistical figures that can help executives make informed decisions.

# Overall Description

## Product Perspective

The product will function as a replacement for the SurveyMonkey web application. The product will include all features paid and free that SurveyMonkey offers. It will also offer user specific roles. The survey designer will only be able to design and deploy surveys. The participants will only be able to take the survey. The data analyst will only be able to analyze the data gathered, perform linear regression on, and create visual representations of the data gathered from the participants. Executives will be able to overview the entire survey design, deployment, and analysis process. The system administrator will be able to add, edit and remove the accounts for each of the above roles.

## Product Functions

## The functions of the Market Research Survey Tool are divided among the roles accordingly.

**Survey Designer**

* The survey designer will be able to create or edit surveys.
* They can set quotas for total responses or responses from certain demographics to ensure any insight gained from the data gathered will be statistically significant.
* They can add, edit, or remove questions of various types.
* They can save questions for later use in other surveys.
* They can submit surveys to be reviewed by executives.
* They can deploy surveys to participants.

*Refer to figures 4 and 8 in Appendix B for relevant Data Flow Diagrams*

**Participants**

* They will be able to take surveys.
* They will be able to answer questions.
* They will be able to review questions in their current section of the survey.
* They will be able to submit their survey.

*Refer to figures 2 and 9 in Appendix B for relevant Data Flow Diagrams*

**Survey Data Analyst**

* They will be able to select a survey to analyze and view the result for all participants who responded.
* They will be able to select a subset of participants’ responses to analyze.
* They will be able to select a subset of questions to analyze.
* They will be able to perform cross-tabs analysis.
* They will be able to perform linear regression on any set(s) of data.
* They will be able to construct and view means, medians, modes, distributions, bar charts, pie charts, and linear regression models.

*Refer to figures 3, 10, and 11 in Appendix B for relevant Data Flow Diagrams*

**Executives**

* They will be able to mark surveys as ready or not ready to deploy, and add comments and suggestions as necessary.
* They will be able to oversee the entire survey creation, deployment, and analysis process.

*Refer to figures … in Appendix B for relevant Data Flow Diagrams*

**System Administrators**

* They will be able to add, remove, or edit accounts for all relevant roles above.
* They will be able to reset passwords for any user in the system.

*Refer to figures 2 and 9 in Appendix B for relevant Data Flow Diagrams*

## User Classes and Characteristics

* **Survey Designer:** The user who designs the actual market research surveys. This user can create, edit, and remove surveys from within the application. They also can set certain statistics for the survey, such as Participant quotas. They can submit their surveys for review to the Executive, and when it is approved they can deploy the surveys to Participants.
* **Survey Analyst:** The user who performs analysis on survey results. They can view any survey that has met the required quota of Participant responses. Within these surveys they can specify certain questions or demographic subsets (or both) and perform basic analysis on the results, such as the mean, median, and mode. They also can perform Linear Regression analysis and Cross Tabulation from within the app, or export the raw response data to a CSV file for more extensive analysis in another application. Analyzed results can also be exported.
* **Survey Participant:** The user who takes the market research surveys. They will receive a link in their email, and upon clicking it they will take the survey within our application. Users will enter responses in various formats (free response, multiple choice, conjoint trade off, etc) and submit those answers to our database. The user can go back to change their answers, but only within specified checkpoints.
* **Systems Administrator:** The user who manages other user accounts on the account database. They can create, edit, or remove accounts from within the application.
* **Executive:** The “super user” of our system. They have the functionality of both the survey designer and survey analyst available to them. In addition, they are able to mark surveys as reviewed and ready for deployment, or in need of refinement, from within the application.

## Operating Environment

The software is a web application that will run on supported versions of Mozilla FireFox, Google Chrome, and Microsoft Edge. We will support Windows 7 and above operating systems. The system will also interface with XYZ Market Research Consultants’ email system. The application will also have to interface with a database that will store all the surveys and the data gathered from them.

## Design and Implementation Constraints

The software application will only be offered in English.

All data gathered from the survey will be owned by XYZ Market Research Consultants and there will be necessary security measures put into place to ensure the data is not lost, stolen or corrupted.

The survey tool will only be able to interface with XYZ Market Research Consultants current emailing system. Any change in the system might cause unexpected results.

The application will only offer support for Windows 7 or above. Using this application on any other operating system might cause unexpected results.

## User Documentation

There are currently no user manuals or documentation offered besides the Software Requirements Specifications. For any help on using the system, refer to SurveyMonkey help center at:

*help.surveymonkey.com*

## Assumptions and Dependencies

1. We assume the application will be run on Windows 7 or above operating system.
2. We assume the application will be accessed through supported versions Mozilla Firefox, Chrome, or Microsoft Edge.
3. We assume the email system used by XYZ Market Research Company will not be changed.
4. We assume all participants have access to the internet and the above mentioned Internet Browsers.

Any variations of use from the above assumptions may cause unexpected results.

# External Interface Requirements

## User Interfaces

Our user interfaces will be similar to SurveyMonkey in both appearance and function. However, our interfaces will be partitioned by user type to promote a more friendly environment for each specific user. For example, an average user will not be presented an option to create a survey, nor will he or she be able to see survey results on their end of the UI. An analyst will not have the option to design a survey; likewise, the designer will not have access to the analysis tools in the end of the UI they interact with.

## Hardware Interfaces

In the primary release of our product, our only planned hardware interactions will be in the traditional desktop/laptop environment. User interaction will be optimized for use with a mouse and keyboard. As the tools are web based they will technically be accessible on mobile platforms but may not be entirely functional or user friendly. After the initial release, we plan on refining our web interface to support these other input methods and device types.

## Software InterfacesDFD_0_ContextDiagram.png

*Market Research Survey Tool Context Diagram*

**Databases**

The application will have to interface with a database that will store all the surveys and the data gathered from them. When a survey designer, analyst, or executive user logs into the market research survey tool, our product will interact with the survey database, which will hold the user emails, passwords, personal information, and roles. The survey database will hold all of the survey questions and possible answers inputted by the survey designer, as well as the corresponding answers submitted by the participants. It will also hold survey specific information including the date it was added, the deadline of the survey, and its state.

**Operating Systems**

The software is a web application that will interact with and run on supported versions of Mozilla FireFox, Google Chrome, and Microsoft Edge. It will support Windows 7 and above operating systems.

## Communications Interfaces

The system will interface with XYZ Market Research Consultants’ email system. When the survey designer chooses to deploy the survey, our product will communicate with their email service provider, which will hold the contact information of all the participants who will receive links to the surveys. Specifics TBD.

Our database will interface with the user’s web client. When the analyst is viewing the results, they will have the option to export the survey data to a CSV file, in which the results stored in the survey database will be viewable as a downloaded CSV file on the user’s machine.

# System Features

The system features are outlined below.

**4.1 User Opens Survey**

**Actor:** Participant

**Goals:** To access the survey and be able to view the questions.

**Preconditions:** Survey designer has made the survey and has sent the survey link to the participant.

**Summary:** The survey designer will send the participant a link to access a survey. Once the participant clicks the link, they will be directed to a survey where they are able to view the first question.

**Related Use Cases:** User takes survey, User completes survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. The user clicks on the link provided to them in an email. | 1. The survey loads in the user’s web browser, and the first question is displayed on the screen. |

**Postconditions:** The first survey question is displayed on the screen for the participant to see.

**4.2 User Takes Survey**

**Actor:** Participant

**Goals:** Complete all questions in survey.

**Preconditions:** Participant has opened the survey.

**Summary:** The participant will answer a series of questions of varying question types. Depending on the question, the user will have to complete all parts before they can advance to the next question. The user also has the option to review previous questions if they are in the same section as their current question.

**Related Use Cases:** User opens survey, User completes survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User reads the displayed question and identifies the question type as multiple choice (radio button), conjoint trade-off, free response, dropdown, ranking, rating, or constant sum. 2. User answers all the questions on the page. 3. User has the option to proceed to next question or go back to previous    1. User answers the questions on the page and presses "Next".    2. User can press "Back" button to go back to the last question unless the user has passed the checkpoint. | 1. *None.* 2. System updates webpage with user's answers and displays "Next" button.     1. The system responds with the next set of questions.    2. The system shows the previous question. |

**Postconditions:** The user has completed all the questions on the page and has clicked the next answers button.

**4.3 User Completes Survey**

**Actor:** Participant

**Goals:** Submit the completed survey to the database and thank the participant for taking the survey.

**Preconditions:** The user has answered all questions and is ready to submit their answers.

**Summary:** The user will click “Submit” when they are on the last question. A confirmation dialog box will open so the user can confirm that they are ready to submit. When they submit their answers, a thank you page appears.

**Related Use Cases:** User takes the survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks "Submit" at the end of the survey 2. The user clicks yes or no. 3. The user has completed the survey. | 1. A dialog box opens asking the user if they are ready to submit their answers. 2. If the user clicks yes, the answers are submitted to the completed survey data base. If the user clicks no, they are taken back to the last question. 3. A thank you message appears to the user. |

**Postconditions:** A thank you page is loaded and displayed on the screen.

**4.4 A User Logs In**

**Actor:** Designer, Analyst, Executive, Administrator

**Goals:** Authenticate user login and prevent unauthorized access

**Preconditions:** User has a username and password

**Summary:** When the user visits the survey website, they will be prompted for a username and password. Each user is given a username and password from the administrator of the system. The system needs to check whether the username and password match; if so, the user will be directed to their corresponding environment.

**Related Use Cases:** None

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User opens the survey webpage. 2. User enters username. 3. User enters password. 4. User clicks “Login.”    1. User enters incorrect password.    2. User enters correct password. | 1. Displays login page. 2. Page reflects what user typed. 3. Page reflects what user typed. 4. System authenticates user login.    1. Displays error message saying "Incorrect username or password."    2. System directs user to their corresponding environment. |

**Postconditions:** User will be logged in, viewing their environment.

**4.5 A User Changes Their Password**

**Actor:** Designer, Analyst, Executive, Administrator

**Goals:** User sets their password.

**Preconditions:** Administrator has already set up their account.

**Summary:** A user can change their password. The first time the user logs in they will be prompted to reset their password from the generated one.

**Related Use Cases:** Create Account, A User Logs In

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User enters new password. 2. User enters confirms password. 3. User clicks “Register.” | 1. Page reflects what user typed. 2. System checks passwords are the same. 3. System authenticates user login, sets the password and directs them to their corresponding environment. |

**Postconditions:** User will be logged in, viewing their environment. Their new password is now set.

**4.6 Make New Survey**

**Actor:** Survey Designer, Executive

**Goals:** To make a new blank survey that is ready for editing by the survey designer.

**Preconditions:** The survey designer is logged in to his profile.

**Summary:** The survey designer will be logged into his profile. On their homepage, they will be able to click a button to create a new survey. Once the designer selects the settings they want, they will click “Create” and a blank survey will open, ready to be edited.

**Related Use Cases:** Open Existing Survey, Save Survey, Publish Survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. The designer clicks the “Create new survey” button. 2. The designer can modify these settings for the survey. Some of the settings include but are not limited name of the survey, participant response quotas, and number of questions in the survey. 3. The designer clicks the create button. | 1. A page of settings opens. 2. *None*. 3. The settings page closes, and a blank survey page opens. |

**Postconditions:** A blank survey will be open and ready for editing.

**4.7 Open Existing Survey**

**Actor:** Survey Designer, Executive

**Goals:** Designer opens a survey that they already started or finished.

**Preconditions:** The survey has been started. The user is logged in.

**Summary:** The user will open a search menu, which will list all saved surveys. This list can be sorted by name, category, survey status, or most recently modified. There will also be a search bar, which can refine the surveys displayed in this menu. Upon selecting a survey, the user will then be presented a few options: "Edit", "Duplicate", "Delete", and "Go Back". If "Edit" is selected, it opens the survey design tools and allows the user to pick up where they left off on the design. If "Duplicate" is selected, they are prompted to rename the duplicate survey. If "Delete" is selected, the user is prompted to confirm or deny the selection. "Go Back" returns to the survey selection menu.

**Related Use Cases:** Make New Survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks on “Open Existing Survey” tab. 2. User can change the order of the list of surveys. 3. User can search for a survey by name. 4. User selects survey. 5. User selects "Edit". 6. User selects "Duplicate". 7. User selects "Delete". 8. User selects "Go Back". 9. Repeat from step 2 as necessary. | 1. System fetches a list of all saved surveys. 2. System re-orders list according to order selection. 3. System searches for similarly named surveys, and presents only those. 4. System opens menu with four options: Edit, Duplicate, Delete, Go Back. 5. System opens survey editing tool. 6. System prompts user to rename duplicate survey. 7. System prompts for confirmation. 8. List of all surveys is fetched again. 9. *None.* |

**Postconditions:** An already existing survey has either been updated, duplicated, deleted, or left alone.

**4.8 Add Question/Checkpoint to Survey**

**Actor:** Survey Designer, Executive

**Goals:** To create a new question or checkpoint that will be added to the survey.

**Preconditions:** Designer has created a new survey and has it open.

**Summary:** The survey designer will add a new question or checkpoint to the survey. When adding a question, they will specify the question type, possible answers, and question flow logic. They will be able to add as many new questions to a survey as they wish, but must add them one at a time.

**Related Use Cases:** Edit existing question, Remove question from survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Add New Question” button. 2. User types in the question. 3. User specifies the question type from a drop-down menu option.    1. Multiple Choice    2. Multiple Answer    3. Conjoint Trade-Off    4. Free Response    5. Drop-Down    6. Ranking    7. Rating    8. Constant Sum 4. User specifies any necessary question type parameters.    1. User specifies number of answer options to display.    2. User types the answer possibilities. 5. User specifies question flow logic and indicates whether there is a checkpoint or not. 6. User exits “new question” template.     1. User clicks “Done.”    2. User clicks “Cancel.” | 1. System displays “new question” template to screen. 2. System displays question on screen. 3. System displays a template for the user-specified question type.      1. System displays user inputs on screen.      1. System displays user inputs on screen. 2. System closes template and displays survey.    1. System saves question and/or checkpoint.    2. System discards question and/or checkpoint. |

**Postconditions:** The new question or checkpoint can be seen in the survey and the user is able to view the new question or checkpoint on the screen.

**4.9 Edit Existing Survey Question**

**Actor:** Survey Designer, Executive

**Goals:** To change a question, question type, answer option, number of answer options, or the question flow logic of an existing question in the survey.

**Preconditions:** Survey designer must have an existing survey already open, with at least one question already created that they wish to change. Designer is logged in.

**Summary:** The survey designer may change a question, question type, answer option, number of answer options, or the question flow logic of an existing question in the survey. They will be able to edit a question as many times as they wish before distributing the survey.

**Related Use Cases:** Add new question to survey, Remove question from survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User finds the question they wish to change. 2. User clicks the “Edit” button on the question. 3. User changes one or more of the parameters displayed on the screen.    1. Types a new question.    2. Changes the question type.    3. Adds/Removes an answer option.    4. Changes the question flow logic. 4. User exits the “Edit Question” screen.     1. User clicks “Done.”    2. User clicks “Cancel.” | 1. *None.* 2. System displays an “Edit New Question” template containing the existing question specifications. 3. System displays the corresponding changed info. 4. System closes the “edit new question” template and the survey is displayed on screen.    1. System saves question changes.    2. System discards question changes. |

**Postconditions:** The changes to the edited question are reflected in the survey, and the user can view them on the screen.

**4.10 Remove Question from Survey**

**Actor:** Survey Designer, Executive

**Goals:** To delete a question from the survey.

**Preconditions:** Survey designer must have a survey open that contains a question that they wish to remove from the survey.

**Summary:** Survey designer is able to remove a question from the survey if they no longer wish to include it. The user is able to remove questions from the survey only until it is distributed to the participants.

**Related Use Cases:** Add new question to survey, Edit existing question in survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User finds the question they wish to delete. 2. User clicks “Delete.” 3. User verifies deletion.     1. User clicks “Confirm.”    2. User clicks “Cancel.” | 1. *None*. 2. System displays a pop-up window asking the user if they are sure they want to delete the question. 3. System closes pop-up window and displays survey on screen.    1. System deletes question.    2. System does not delete question. |

**Postconditions:** The deleted question is no longer present in the survey and cannot be seen by the user.

**4.11 Save Changes to Survey**

**Actor:** Survey Designer, Executive

**Goals:** To be able to save an existing survey so that it can be viewed, edited, or published at another time.

**Preconditions:** Designer is logged in. Survey designer has created a survey.

**Summary:** The survey designer will be able to save a survey so that it can be viewed, edited, marked as “Ready for Review,” or published at another time. The survey designer can save a survey as many times as they wish until the survey has been published and distributed to participants.

**Related Use Cases:** Mark survey as ready for review, Publish survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Submit Changes.” | 1. Current state of survey saved to database. Save window pops up saying "Survey Saved." |

**Postconditions:** User is returned to survey in current state. System has stored copy on server.

**4.12 Mark Survey Ready for Review**

**Actor:** Survey Designer, Executive

**Goals:** Ask for feedback on a survey from executive(s) before publishing.

**Preconditions:** At least one survey design in progress. User is logged in. User is viewing the survey they wish to have reviewed.

**Summary:** A survey, whose design is in progress, has been selected, so it can be put up for review by the executive.

**Related Use Cases:** Save Survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Ready for Review.” | 1. Current state of the survey is saved and the system marks the survey as ready for review. |

**Postconditions:** User can see the survey is marked ready for review.

**4.13 Select Survey to View Statistics**

**Actor:** Survey Analyst, Executive

**Goals:** Locate a survey to view response statistics for.

**Preconditions:** Survey has been published. Survey has at least one completed survey response. User is logged in.

**Summary:** When the analyst decides to view statistics on survey responses, they will open up a menu which lists out surveys. This list can be sorted in various ways: alphabetically, by number of responses, by date deployed, etc. There will also be an option to search for a specific survey through use of keywords in the title or description, so that the list only displays matches to the search. The analyst will then click on the survey of their choosing.

**Related Use Cases:** Open survey, Select questions to view statistics for, Select statistics to view

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Analyze A Survey.” 2. User navigates to survey. 3. User searches for survey. 4. User picks survey to view stats for. | 1. System opens survey search menu. 2. *None.* 3. System refines displayed options. 4. System fetches survey. |

**Postconditions:** A new page is opened, show various response details about this survey, as well as statistical refinement options.

**4.14 Select Question to View Statistics**

**Actor:** Survey Analyst, Executive

**Goals:** View the question and analysis of the responses to the question.

**Preconditions:** The user has selected a survey to view statistics for.

**Summary:** The user views the list of questions and selects the one that they wish to view. The user then presses a button to show all the data for that question. It has basic analysis at the top and all of the responses below. There are also other features that the user can use, such as analyzing the data with another tool.

**Related Use Cases:** Select Survey to View Statistics, Select Statistics to View

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User views the list of questions and selects the one that he/she wishes to view. 2. User presses "View Statistics." | 1. System shows that the question is selected. 2. System opens the question and shows some statistics and all of the answers for the question. |

**Postconditions:** A new page is opened where the user is viewing a question and all of its responses, where the user can then analyze the data further using tools.

**4.15 Select Statistics to View**

**Actor:** Survey Analyst, Executive

**Goals:** Specify exactly what types of statistics to view, and how they should be represented.

**Preconditions:** A survey with responses has been opened by an analyst account, and questions have been selected to view statistics on. User is logged in.

**Summary:** The analyst will see two successive menus. The first menu will list all demographics present in the surveys responses, grouped by category (age, sex, race, etc). Next to each option will show the total number of responses which checked off that demographic. Any number or combination may be selected on demographics. The analyst then hits “Next” and is moved to the second menu, which lists different available statistics. In a similar fashion, they select any number or combination of statistics to view then click “View Statistics” to confirm their choices.

**Related Use Cases:** Select Questions To View Statistics For, Select Survey to View Statistics

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User confirms question(s) to view stats for. 2. User identifies a subset of users on which to view statistics, and hits “Next.” 3. User identifies the statistical information to view for the specific set of questions, and hits “View Statistics.”    1. If user chooses "**regression analysis"**, the user selects the independent and dependent variables.    2. If the user chooses "**cross-tabs"**, the user specifies the variables to place in the rows and columns. | 1. System opens the “Select Statistics to View” menu. 2. Menu advances to the second page, with statistical options. 3. System displays the selected statistics for the groups specified. |

**Postconditions:** Statistical summary page is displayed.

**4.16 Export Survey Results**

**Actor:** Survey Analyst, Executive

**Goals:** Export the survey to another format.

**Preconditions:** The survey has been published, the survey has at least one complete response, and the user has selected a survey.

**Summary:** The information from the survey needs to be exported to CSV and/or Excel format so that the analyst can perform various actions on the data. The analyst can either export all of the data from the survey or a subset of that data based on what they choose.

**Related Use Cases:** Open survey, Select Survey to view statistics, Select statistics to view

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User selects set of responses he/she wishes to export. 2. User presses "Export." 3. User chooses the format and presses "Export." | 1. System shows output in a spreadsheet format in the app. 2. Window pops up where the user can choose which format. 3. File is exported to the user's downloads. |

**Postconditions:** The system goes back to showing the output in a spreadsheet format in the application.

**4.17 Create Account**

**Actor:** Administrator

**Goals:** Create a new username, password, and specify any other info pertaining to the new account.

**Preconditions:** New username and role have been provided to the Administrator. Administrator is logged in.

**Summary:** A new user is to be added to the system. The Administrator creates a new account with the given username, and a random password is generated. The type of account is specified by the Administrator.

**Related Use Cases:** Edit Account, Remove Account

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User presses “Create New Account.” 2. User enters new account information. 3. User clicks “Generate Password.” 4. User clicks “Submit.” | 1. System displays entry fields. 2. *None*. 3. System generates random string as temporary password for the account which is displayed in the administrator panel. 4. Account is added to database. |

**Postconditions:** User is taken back to main administrator menu. New account has been added to database.

**4.18 Edit Account**

**Actor:** Administrator

**Goals:** Change information of a previously made account.

**Preconditions:** User account exists. User is logged in.

**Summary:** An existing user needs to have their info changed. The administrator can edit their username and job field, as well as generating a new temporary password.

**Related Use Cases:** Create Account, Remove Account

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Edit Account.” 2. (opt) User changes username or role. 3. (opt) User clicks “Generate Password.” 4. User clicks “Update Info.” | 1. System displays entry fields filled in with previous data. 2. *None.* 3. System generates random string as temporary password for the account which is displayed in the administrator panel. 4. New account info is stored into database. Old password is overwritten. |

**Postconditions:** User is taken back to main administrator menu. Existing user account has changed data stored in the database.

**4.19 Remove Account**

**Actor:** Administrator

**Goals:** Delete pre-existing account.

**Preconditions:** Account exists. User is logged in.

**Summary:** An existing user no longer needs their account. The administrator removes it.

**Related Use Cases:** Edit Account, Create Account

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Delete Account.” 2. User enters username and clicks “Search.” 3. User clicks “Delete Account.” | 1. System displays search field. 2. System displays corresponding user account. 3. Account is deleted from the system. |

**Postconditions:** User is taken back to the main administrator menu. Existing user account is no longer stored in the database.

**4.20 Mark Survey Reviewed**

**Actor:** Executive

**Goals:** Provide feedback on a survey created by designers but not yet published.

**Preconditions:** At least one survey design in progress has been selected to review or marked as ready for review. User is logged in.

**Summary:** A survey, whose design is in progress, has been selected by the executive, so they can review it.

**Related Use Cases:** Open Existing Survey

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Passed Review.” 2. User clicks “Failed Review.”    1. User writes comment.    2. User makes edit. | 1. System marks the survey as ready for publishing.    1. User is given option to publish. 2. System marks the survey in progress.    1. Comment is sent to survey designer.    2. Survey is updated to reflect change. |

**Postconditions:** User has made a determination of the state of a survey. User can either select to publish the survey, or make an edit and/or leave a comment depending on the state.

**4.21 Publish Survey**

**Actor:** Survey Designer, Executive

**Goals:** Publish a survey so participants can respond.

**Preconditions:** At least one survey has been completed and passed review. User is logged in.

**Summary:** A selected survey that has passed review can be published and sent to participants to gather responses.

**Related Use Cases:** Mark survey reviewed

**Steps**

|  |  |
| --- | --- |
| **User Action** | **System Response** |
| 1. User clicks “Publish Survey.” | 1. System generates unique links which can be distributed to survey participants. System waits for responses. |

**Postconditions:** User can view the contents of the selected survey. User can view data and responses if a survey has at least one response.

# Other Nonfunctional Requirements

## Performance Requirements

No performance requirements were gathered at this time (Need clarification from client)

## Safety Requirements

No safety requirements were gathered at this time (Need clarification from client)

## Security Requirements

All data gathered from the surveys is owned by XYZ Market Research Consultants. The data will be secured in such that it will not be lost, stolen or corrupted in any way.

Every user in XYZ Market Research Consultants will require a username and password to access the system. The system administrator will be in charge of distributing this information to every user of this program. Failure to meet this requirement may jeopardize the integrity of the data.

## Software Quality Attributes

* Application won’t crash when multiple users are accessing the product simultaneously
* Any data transferred between systems is not corrupted
* Data stored in the database is secured
* Additional software quality attributes to be discussed with client

## Business Rules

The operating principles of the application for each role are as follows:

The **Survey Designer** will only be able to make or edit surveys. They will not have access to any of the data gathered from the data. Before deploying a survey, they must submit and pass a review by an executive.

The **Survey Data Analyst** will only be able to

view and analyze the data collected from the surveys with the provided tools. They will not be able to edit or modify any part of the survey in any way.

The **Executive** will be able to oversee the entire process. They will be able to edit and modify a survey. They will be able to view and analyze the data gathered from the survey. They are responsible for marking a survey ready for deployment. They will also be able to deploy the survey.

The **System Administrator** will only be able to add, modify, or remove accounts. They will not be able to view or modify any survey or any of the data gathered from any survey.

The **Participant** will only be able to take a survey. They will not be able to edit or modify the survey in any way. They will not be able to view any data gathered from the survey

**Appendix A: Glossary**

**Name:** Question

**Purpose:** Hold all the related information regarding a question, including answers, question type, and question logic.

**Where it's used:** A page of questions consists of one or more questions on a page. These questions will be created by the survey designer and interpreted by the survey analyst.

**Where it's stored:** Database of questions

**Content:** A question is an object that holds all of the information regarding a question, such as its type, text, responses, possible responses, and an identifier that is used in the question bank. It is the basic building block of the survey.

**Name:** Pages of Questions

**Purpose:** To hold of the questions for one particular survey.

**Where it's used:** A survey designer adds questions to a page, creating a page of questions.

**Where it's stored:** Survey Database

**Content:** By holding questions on a page, we can ensure that the question flow logic is correct and that related questions can be on the same page.

**Name:** Survey

**Purpose:** Holds all of the information relating to the survey

**Where it's used:** A survey designer creates a new survey when pressing "Create New Survey" button. The analyst views the survey.

**Where it's stored:** Survey Database

**Content:** The survey will consist of a survey name, pages of questions, the question logic, the total number of responses, and the last modified date. The survey is the object that will contain all of the information regarding a particular survey. Each survey will be its own entity.

**Name:** Password

**Purpose:** The user's private form of authentication that is required to log in

**Where it's used:** When the user logs in and in the admin panel

**Where it's stored:** User/Account database

**Content:** A password is a string of text that consists of 8-16 characters with at least one lowercase letter, one uppercase letter, and one symbol. It will be stored in a hashed form to ensure user security.

**Name:** Username

**Purpose:** The public form of identification which the user needs to log in

**Where it's used:** When the user logs in and in the admin panel

**Where it's stored:** User/Account Database

**Content:** A username is a string of characters that denotes a user. Each username is unique and must be at least 2 characters long.

**Name:** User

**Purpose:** To identify the person performing actions through the software and ensure security

**Where it's used:** When the user logs in and in the admin panel

**Where it's stored:** User/Account Database

**Content:** A user consists of a username and password that are used to authenticate the user. The person must log in using these two fields in order to be logged in as the user. A user has a role that is one of the following: survey designer, survey analyst, administrator, or executive.

**Name:** Question Bank

**Purpose:** to hold the saved questions for future use

**Where it's used:** When a survey designer wants to save a question, they assign it an attibute and save it into the question bank.

**Where it's stored:** Question Database

**Content:** A question bank is a collection of raw questions, meaning the questions do not have responses. It allows for the survey creator to save questions for future use.

**Name:** User Role

**Purpose:** To ensure users only see their environment and cannot perform actions that they are not authorized to do

**Where it's used:** This is used when logging a user in and when displaying the user's homepage.

**Where it's stored:** User/Account Database

**Content:** A user role is a group that users have that assign them certain privileges. A role is one of the following: survey designer, survey analyst, administrator, or executive. Each role has an ID and an identifier name so that the admin knows which role he is assigning users to. It will also possess a homepage which is the default screen that the user will go to when they log in.

**Name:** Question Type

**Purpose:** To allow templates to be used when adding questions to a survey.

**Where it's used:** When adding a question to the survey, the designer will have to choose within a selection of question types.

**Where it's stored:** Survey Database

**Content:** It is a template for questions. Each question will have a template that will determine how the participant will interact with the survey and how it will be formatted. Also, it will be the defining feature of which analysis tools can be used when the analyst wants to analyze the data.

**Name:** Question Logic

**Purpose:** The purpose of question logic is to control which question a participant will see next. This allows for conjoint trade-off questions.

**Where it's used:** When adding a question to the survey, the designer has the option to add question logic to control which question the participant will see next based off the participants answer.

**Where it's stored:**  The question logic is stored within the question in the survey database.

**Content:**  The question logic will contain conditional statements. For each answer in a question, the designer will see “if [this answer] then go to [next question].”

**Name:** Number of Responses

**Purpose:** The designer will set this when configuring a survey, so they can gather enough responses so their data and any results can be statistically significant.

**Where it's used:** This option is available to the survey designer when they are configuring a survey.

**Where it's stored:** This is stored with a survey in the survey database.

**Content:**  The designer has the option to set an overall and demographic base response target for each survey.

**Appendix B: Analysis Models**



*Market Research Survey Tool Context Diagram*

UCD-AdministratorOverview.png

*Fig 1. Administrative User Use Case Overview Diagram*

UCD-ParticipantOverview.png

*Fig 2. Participant Use Case Overview Diagram*

UCD-SurveyAnalystOverview.png

*Fig 3. Survey Analyst Use Case Overview Diagram*

UCD-SurveyDesignerOverview.png

*Fig 4. Survey Designer Use Case Overview Diagram*

Administrator_DFD_1.png

*Fig 5. Level 1 Data Flow Diagram : Administrative User*

Manage_Accounts_DFD_2.png

*Fig 6. Level 2 Data Flow Diagram : Account Management*

Log_In_1.png

*Fig 7. Level 1 Data Flow Diagram : Log in*

Designer_DFD_1.png

*Fig 8. Level 1 Data Flow Diagram : Designer Makes A Survey*

Participant_DFD_1.png

*Fig 9. Level 1 Data Flow Diagram : Participant Takes A Survey*

SurveyAnalyst.png

*Fig 10. Level 1 Data Flow Diagram : Analyze a Survey*

Analyze Data level 2.png

*Fig 11. Level 2 Data Flow Diagram : Data Analysis*

AdministratorCreateAccount.png

*Fig 12. Data Sequence Diagram : Create an Account*

UserDesignsSurveyFromScratch.png

*Fig 13. Data Sequence Diagram : Create a New Survey*

UserEditsExistingSurvey.png

*Fig 14. Data Sequence Diagram : Edit an Existing Survey*

MarkSurveyAsReviewed.png

*Fig 15. Data Sequence Diagram : Mark Survey as Reviewed (Executive) or Ready for Review (Designer)*

ParticipantTakesSurvey.png

*Fig 16. Data Sequence Diagram : Take a Survey*

UserSelectsSurveyToAnalyze.png

*Fig 17. Data Sequence Diagram : Choose Survey to Analyze Responses*

SelectQuestiontoViewStatistics.png

*Fig 18. Data Sequence Diagram : Select Questions From a Survey to View Statistics For*

**Appendix C: To Be Determined List**

1. Safety, performance, and security requirements
2. Software quality attributes
3. Level of security and its implementation
4. Software interfaces specifics, including how the final survey products of our system will communicate with user email systems such as Outlook, gmail, etc.