



Team members: (Top Left to right) Cailín Smith, Amogelang P Moloko, Christopher J Oakes
(Bottom Left to Right) Achal Seechoonparsad, Jacqueline L Lawler

Team Information

 15022014	 Jacqueline L Lawler	 u15022014@tuks.co.za	 0797581409
 15213626	 Christopher J Oakes	 u15213626@tuks.co.za	 0834074027
 14284783	 Amogelang P Moloko	 u14284783@tuks.co.za	 0741020360
 15035892	 Cailn Smith	 u15035892@tuks.co.za	 0769363737
 15278043	 Achal Seechoonparsad	 u15278043@tuks.co.za	 0718894149

Deliverable 1-Project Proposal

This document contains the full project proposal for the TRWLA System. The project proposal contains a plan of action to address the current business problem that the organisation faces. The project proposal also addresses the potential solutions to the problem, motivations about why to use a specific solution as well as reasons why that solution is the best on possible for the project. This is all achieved by means of figures, diagrams, tables and general explanations.

Contents

1.	Introduction	1
2.	Client Information	2
2.1	Introduction.....	2
2.2	History and Background	2
2.3	The Organisation	2
2.4	Contact Person	5
2.5	Conclusion	5
3.	Project Request.....	5
3.1	Introduction.....	5
3.2	Project Motivation	5
3.3	Conclusion	6
4.	Project Charter.....	6
4.1	Introduction.....	6
4.2	Problems, Opportunities and Directives	6
4.3	Preliminary Scope.....	19
4.4	Preliminary Constraints.....	20
4.5	Other Issues.....	21
4.6	Conclusion	21
5.	Problem Analysis.....	21
5.1	Introduction.....	21
5.2	Executive Summary	22
5.3	Background Information	23
5.4	Overview of Current System	23
5.5	Detailed Recommendations.....	24
5.6	Analysis of the Current System	29
5.7	Conclusion	31
6.	Requirements Analysis.....	31
6.1	Introduction.....	31

6.2	User Requirements.....	31
6.3	Requirements Description	35
6.4	Use Case Diagram.....	76
6.5	Conclusion	88
7.	Decision Analysis.....	88
7.1	Introduction.....	88
7.2	Feasibility Analysis.....	88
7.3	Details of Analysis	94
7.4	Recommendations	99
7.5	Conclusion	99
8.	Appendix A: Client Documentation	100
9.	Appendix B: Other Systems Investigated.....	115
9.1	Introduction.....	115
9.2	Requirements: Manage Users, Employees and Students	115
9.3	Requirements: Manage Events	117
9.4	Requirements: Manage Budget	121
9.5	Requirements: Marketing	123
9.6	Requirements: Calendar.....	125
9.7	Requirements: Generate Reports	125
9.8	Requirements: Manage Communication	126
9.9	Requirements: Manage Feedback.....	127
9.10	Requirements: Donations.....	128
9.11	Requirements: Manage Stock	128
9.12	Conclusion	129
9. 12	GAP Analysis Report.....	130
	Introduction.....	130
	Current System.....	130
	Ideal Future System.....	130
	GAP requirements analysis between current and ideal system	131
	Conclusion	133

10. Appendix C: Complexity	133
11. Conclusion	139
11. Sign-Off by Client	141
12. References	142

1. Introduction

This document contains the entire project proposal for the TuksRes Women in Leadership Academy. It begins by outlining the clients' information in order to give the reader a clear understanding of who the client is. The next section covers the project request, which is the reason why the team has chosen to go ahead with this particular project. Next, the project charter will be covered, which clearly describes the business problem as well as any opportunities available. Scope, constraints and other issues are discussed in the project charter. A detailed problem analysis will then be laid out to give the reader a clear idea of each problem the business faces. The problems analysis includes the system currently in use by the client, why that system is not the optimum solution, suggestions on what the optimum solution would be, and a motivation to the management and directors of the organisation as to why they should go ahead with the proposed solution. The requirements for the proposed solution are identified and explained in detail during the next section of the document. Each requirement that is identified is numbered efficiently for future reference. After the requirements of the to-be system have been identified, a feasibility analysis will be executed and explained, which also motivates why the proposed system should be pursued. The document is then finalised with appendices relevant to the project proposal and concluded.

2. Client Information

2.1 Introduction

In the following section, the client – TuksRes Women in Leadership Academy – will be introduced. This introduction will include a history and background of the organisation, an explanation of what the organisation is and the nature of the organisation, a graphical representation of the organisational structure and the details of the person with whom the team will be working throughout the year to design, develop and implement the system.

2.2 History and Background

A Medical student of the University of Pretoria named Cyan Brown founded TuksRes Women in Leadership Academy in 2014. Cyan recognised the need for certain personal, professional and leadership skills for young women in residence that were not addressed by academic programmes. The organisations main purpose is enriching and empowering young women to realise and attain their full potential throughout their university and industry careers as well as in their personal aspirations. With their goal of working towards a gender equal society, TRWLA focuses on the provision of growth and empowerment skills to first and second year female students at the University of Pretoria.

2.3 The Organisation

TuksRes Women in Leadership Academy is a non-profit organisation, which is a part of TuksRes. The nature of the organisation is to equip young women in high school and university with certain personal, professional and leadership skills - which makes it a skills development organisation.

Area of Business: TRWLA can be located at the University of Pretoria, and the leading director is based in the TuksRes building on 90 Duxbury Road. The founder, directors, management and facilitators are all either staff of the university, previous students at the university or current students at the university.

Business Environment: The organisation is of an academic nature, and as such, is affected by the demand for the type of skill's that are offered by the academy. The organisation is

not primarily affected by normal economic supply and demand, however, due to recent fee crises, is affected by a decrease in budget from the university. Below are the external and internal factors of the business environment:

External Factors:

- Demand for leadership training at a university level
- Student trends
- Market size – The amount of women in res and joining day houses will affect how many people sign up for TRWLA
- Number of competitors – other organisations on campus offering leadership training

Internal Factors:

- Objectives of business - to provide women in residences with a platform to develop their skills
- Policies of business – Only female res students in first and second year of university may register for TRWLA
- Management information system- The current information system is paper-based
- Participation of management
- Organisational structure - Consists of directors, team leaders, team members, facilitators and students.

As previously mentioned – the organisations three main employee components are the directors, management and facilitators. The directors take charge when it comes to large-scale decision making that affects the organisation as a whole. Management is in charge of organising, leading and controlling all the tasks within their specific portfolio. Facilitators are the face of the organisation, and are in charge of mentoring and training the students of TuksRes. Below is a graphical representation of the organisational structure, outlining the different positions within the organisation.

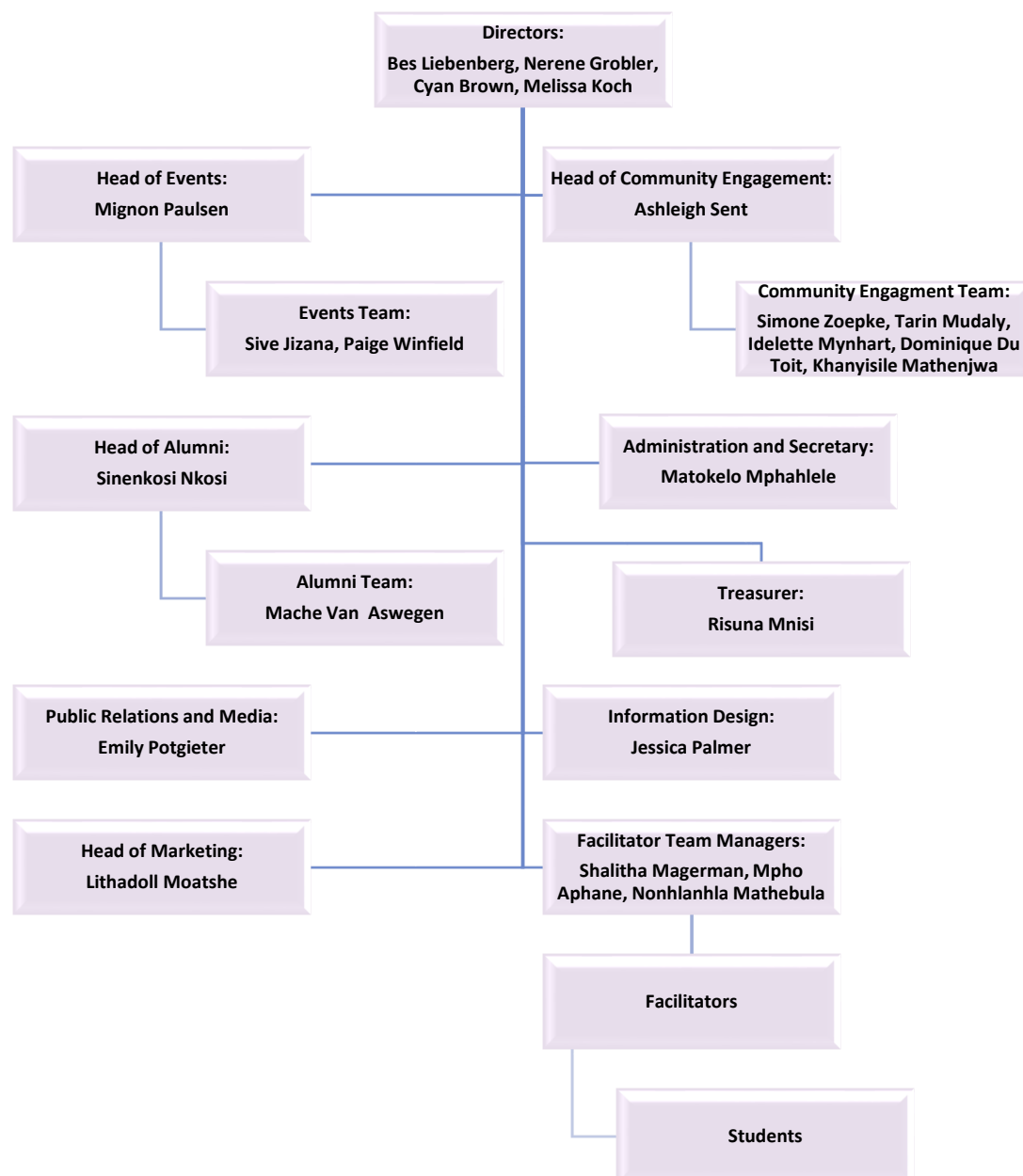


Figure 1- Organisational Structure

2.4 Contact Person

The person with whom the team will be communicating throughout the design, development and implementation of the TuksRes Women in Leadership Academy System is Bes Liebenberg. Bes is part of the TuksRes management with the role of student support and leadership development within TuksRes. Bes is also on the board of directors for the TuksRes women in Leadership Academy. Below are her contact details:

Email: bes@up.ac.za

Cell Phone Number: 082 908 3588

2.5 Conclusion

This section of the project proposal covered the client's information. It began with an introduction to TuksRes Women in Leadership Academy, and a description of the organisations history and background. The organisation was then discussed in detail, and was graphically represented by means of an organisational structure. Finally, the contact person with whom the team will be collaborating was introduced and her contact details were laid out.

3. Project Request

3.1 Introduction

The following section of the document contains the project request. The project request includes the motivation for doing the project, which explains the current problem the business faces, and a motivation as to why it is in the organisations best interest to go forward with the team's project proposal.

3.2 Project Motivation

The TuksRes Women in Leadership Academy was found in 2014, and has since grown exponentially. Initially, using a paper-based system was sufficient for the management of the organisation. As the work-load increased, along with the student base, the management realised that it was inefficient and ineffective to work the way they previously did on a paper-based system. It is for this reason that an information system

has been proposed. Not only will an information system increase overall efficiency within the organisation, it will ultimately save the organisation time and money. It will also increase employee and student satisfaction.

3.3 Conclusion

In conclusion, the TuksRes Women in Leadership has very much to benefit from the team developing an information system for them. Ultimately, the organisation will be more organised, efficient and will carry its tasks out far more effectively once the team has implemented the information system for them.

4. Project Charter

4.1 Introduction

The following section focuses on the problems, opportunities, preliminary scope, constraints and other issues that will be faced throughout the fulfilment of the system being developed for TRWLA. It breaks down each problem and its proposed solution, describes the scope of the proposed project, details the constraints that have been identified and determines any other issues that might arise in the next couple of months.

4.2 Problems, Opportunities and Directives

Problem Statement Matrix

PROJECT:	Ad Victorium	PROJECT MANAGER:	Bes Liebenberg
CREATED BY:	Christopher Oakes	LAST UPDATED BY:	Christopher Oakes
DATE CREATED:	2nd March 2017	DATE LAST UPDATED:	4th March 2017

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
1	TRWLA management does not know of the effectiveness of the courses offered nor of the effectiveness of the org itself. Need for a feedback system on the content of courses.	8 months	Medium. This will be on a communication level.	Greater understanding on the effectiveness of the course content.	1	New development
2	Many students sign up for TRWLA through a paper-based system that leads to the loss of information of prospective members. Automated	8 months	High. This will be a physical point where prospective students will be able to sign up via a computer or smartphone.	Easier interpretation on who wants to be in the organisation for follow up attendance.	1	New development

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	system for signing up for events within TRWLA.					
3	Many events happen throughout the year but members find it difficult to keep track of which events they should attend. Calendar system to keep all TRWLA members in the loop on upcoming events.	8 months	High. This will be accessible to every user via a smartphone device, its email, and the web application.	Users will constantly know what is upcoming within TRWLA. This will benefit members wanting certification as well as for all Res related things.	1	New development
4	TRWLA has no method of controlling who can post what	8 months	Low. This will be a back-end part of the system, as people from	Higher management will be able to have access to	1	New development

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	information as all their details are shared throughout. Access capabilities within the system.		different levels of the organisation will have access to different parts of the system.	certain things that facilitators do not.		
5	Information on members is lacking and there is no way to track who is a part of TRWLA. Create a database to house all the info of those who are a part of TRWLA.	8 months .	Low. This will be a back-end part of the system that the user will not have direct access to. They will just be allowed to view and update profiles rather than having actual access to the database.	TRWLA management and Board of Directors will have access to the information of those that are a part of TRWLA for audit purposes.		
6	TuksRes is the main funder of TRWLA. Budget cuts	8 months .	High. Individuals will physically interact with	This will allow TRWLA to receive a different	1	New development .

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	has left TRWLA struggling to find ways to fund themselves. A way to receive donations from potential donors at charity events as well as on the web page.		the system at either charity events or regular events held by TRWLA. Additionally, visitors to the website will be able to make donations by clicking on a link found on the website.	form of income other than TuksRes. The organization has already received a lot of donations but few people know where and how to do it, as such this will make this process more efficient.		
7	Course work is printed on a paper-based system costing TRWLA's annual budget. Course work to be	8 months	High. Users will interact with the course work online via the application.	This will save TRWLA money regarding the budget. It will be easier for students to access the	1	New development . Content provided by Nerene.

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	implemented online to save money printing the content as less content will be printed.			course content online as well.		
8	Members of TRWLA take many photos during events and community service. These do not meet the public eye, which could be a potential marketing tool for TRWLA. Galleries can be implement on the website. This will be accessible by all those that	8 months	High. Users will be allowed to load photos onto the system which will be viewed by both internal and external users of the system.	This will allow prospective participants to see what TRWLA is about and encourage them to join if they were unsure of being a part of the organization.	2	New development . Photos to be approved by a management member.

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	visit the website.					
9	The website will need to be managed so that it may remain up to date and current with the activities of TRWLA. Client Management System implementation onto the website so that TRWLA is able to access and edit all information and media on the website without the need of contacting	8 months .	High. Higher users of the system will have access to a physical dashboard which will allow them to edit the content on the website.	CMS will allow management of TRWLA to keep their website up to date without the need to pay for technical support saving the organization on their budget.	1	New development .

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	technical support.					
10	TRWLA struggles to provide additional reading material for the members that find a particular topic interesting. An E-Book Library could be implemented to allow for this to be maintained and managed by TRWLA management.	8 months	High. Users of this aspect of the system will have access to an E library in which they can interact and make use of.	This will provide TRWLA members with additional reading on topics that have been discussed in the course content. It will show members where to find the books/articles and possibly house books.	1	New Development
11	Members going into different schools often do not have	8 months	High. The information displayed will assist users regarding the	By offering this information to members, recipients of	2	New development

Brief Statements of Problem, Opportunity, or Directive	Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
<p>background information on the school, which can lead to improper interactions as well as lack of understanding . A School page that displays all of the information of the schools that a TRWLA member will visit. This will include background info on the school as the course content that will be lectured at the school by the</p>		<p>schools that they attend. Information will be displayed on the website for all internal users to view and see.</p>	<p>course content will feel more interested with TRWLA and thus the organisation will gain more members. In turn this could lead to a greater budget in future years.</p>		

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	TRWLA member					
12	<p>TRWLA currently has a smaller budget than ever before. Thus, a proper way to manage and assess the amount of money spent is required. A budget management system is needed to assist in this regard. It will aid in:</p> <ol style="list-style-type: none"> 1. Catering 2. Transport 3. Events 4. Workshops 	8 months	High. This will assist TRWLA management to physically view a dynamic budget so they know exactly where their current budget lies.	By providing this sort of system, TRWLA will know exactly where their budget is going. This could in turn save TRWLA money by allowing them to make more cost effective decisions.	1	New development

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	5. Guest speakers 6. Printing					
13	Members of TRWLA do not have a system to track their progress through their course content. A rewards system will be implemented through a progress bar and achievement system.	8 months	High. Users will be able to see how they are moving through their course.	Members will have a greater sense of what they are working towards with the course. TRWLA will experience a higher member course completion.	1	New development
14	TRWLA is required to use a set list of resources that are affiliated with the university. Management	8 months	Medium. This will be a back-end resource list housed by a database but it will still be able to be viewed by	Supplier/TR WLA interaction will be more efficient. Money will be saved with	1	New development

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	are often not aware of which specific suppliers are meant to be used by them. A database will be implemented that will keep track of all of the suppliers that are used by TRWLA		users of the system.	logistical means.		
15	Discussions are held within the organization on certain course related topics. Not a lot of members are able to give their input on such	8 months	High. This will be a present, dynamic part of the system as it will be used by all internal users of the system regarding discussion topics.	This will allow certain topics to addressed quickly and efficiently within TRWLA.	2	New development

Brief Statements of Problem, Opportunity, or Directive		Urgency	Visibility	Annual Benefits	Priority or Rank	Proposed Solution
	discussions. A chat room/forum will be implemented so that TRWLA members will have a voice within the organization.					

PIECES Framework

Performance: The website will be hosted by WebAfrica, which allows for unlimited disk space, web traffic, email accounts and MS SQL databases. The only hardware requirement is that all users of the system have access to a smart device with internet access. The system must be responsive to all mobile devices.

Information: The system needs to have the ability to process and store all the data required for reporting purposes. The system needs to have accessibility to an MS SQL database in order to store and process the information.

Economy: The system needs to be developed on a low budget because the organisation is a not for profit organisation and does not have a lot of money to spend on its development. The system will ultimately save money for the organisation by means of saving printing, paper and time costs.

Control: The information of the users' needs to be protected and secure, and in terms of the POPI act, the users information may not be distributed without their permission.

Efficiency: There are no restraints in terms of access to the system. The system and database must be developed in such a way that it has optimal caching functionality to optimise loading time. The system should be able to make use of cookies to customise the website to the users search history.

Services: The system must be available to the user in any location, which it is because it is web-based.

4.3 Preliminary Scope

The TRWLA management system that will be developed is aimed at providing a solution for the communication and feedback problem of the organization. Regarding course content, it will provide a means to work online to reduce paper usage and save the organization money by making an effective budgeting system.

All users from TRWLA spanning from the Board of Directions, Management, Facilitators and Students, will have access to the system. The system will focus on making communication paramount within TRWLA, leading to a more efficient and effective achievement in its goal of empowering woman to become strong leaders.

The system will require the use of different programming languages such as PHP, HTML, CSS, C#, SQL and JavaScript to maintain optimum success in the working environment. Through a dedicated web server, the system will run online making it a dynamic application not solely based on one desktop or location allowing users to access it anytime and anywhere.

Entities about which data is to be stored includes:

- Users
- Students
- Employees
- Events
- Communication
- Calendar
- Budget

- Content
- Suppliers
- Stock
- Marketing
- Reports
- Donations

4.4 Preliminary Constraints

Budget:

As TRWLA is a TuksRes affiliated organization, it falls under the budget of TuksRes as well. Due to the recent Fees Must Fall protests, the University of Pretoria has had to restructure the way in which it makes use of its fees. This has resulted in budget cuts across the campus, including TuksRes resulting in nearly half of the budget of 2016 being cut for 2017 with TRWLA.

When taking into consideration the proposed system that TRWLA will make use of, the team has to take into account the fees it will cost TRWLA to run the system when the system is deployed within the organization. This affects the decisions we must make in terms of the software that is used as well as the means of which we carry out this task. Consideration in this regard will be paramount throughout the development of the project, as we have to consider the limited budget that TRWLA has to work with throughout the year.

Technical Know How:

Members within the TRWLA management team come from all different facets of the university. This will play into the development of the system, as the system will have to take into consideration all individuals' proficiency of making use of a system. Thus, the system has no "average" user. This will play a role in the functionality developed for the system, as its users will come from many different backgrounds throughout South Africa.

Time:

The organisation is in desperate need of a system upgrade and as such need the system as soon as possible. Time is of the essence as having the system sooner rather than later will benefit the organisation tremendously.

4.5 Other Issues

Knowledge of the Team:

The task ahead requires the team to make use of many skills that not everyone has fully grasped or have even begun to look into. This creates an uncertainty within the team regarding how they are able to complete the assignment and provide a developed working system to TRWLA as promised.

The team will have to focus on learning new skills while concurrently applying them to the task when it comes the programming section of the project. HTML, CSS, JavaScript, PHP and MVC are new concepts for over half of the group, which will certainly lead to issues in the future regarding stress and professionalism in terms of functionality.

The team has decided that additional hours will be spent together in order to gain knowledge from one another on concepts that are not clear to everyone in order to provide a professional, real system to TRWLA upon conclusion of this project.

4.6 Conclusion

The above section details the problems, opportunities, preliminary scope, constraints and other issues that are going to be faced throughout the fulfilment of the system being developed for TRWLA. It broke down each problem and its proposed solution, described the scope of the proposed project, detailed the constraints that have been identified and determined any other issues that might arise in the next couple of months.

5. Problem Analysis

5.1 Introduction

The following section contains a detailed problem analysis, this gives the reader a clear idea of each problem the business faces - including the system currently in use by the client, why that system is not the optimum solution, suggestions on what the optimum

solution would be, and a motivation to the management of the organisation as to why they should go ahead with the proposed solution.

5.2 Executive Summary

The TuksRes Women in Leadership Academy stores its data and information on a primarily paper-based system. As such, they find that a lot of their data is duplicated across the various spreadsheets and logbooks, making it redundant and difficult to work through. There is no centralised system within the organisation where people can access relevant information which often forces stakeholders to personally ask other stakeholders for the relevant information needed. There is no specific method of communication within the organisation. There is an opportunity to create a system for the Academy that addresses these problems, as well as introducing a more innovative and efficient way to distribute and teach content to students by making the content available to them electronically.

The three options that were considered with regards to addressing the business problem. The first one is to develop a web-based database management system and have an external website from Wordpress, which is rejected as this type of solution would not meet the academy's requirements and needs. The second option is to have a local database management system software and have an external website, this is also rejected as this type of solution would not meet the academy's objectives and requirements.

The third option is to develop a customised dynamic web application solution, which is recommended as it will help the organisation to function efficiently and effectively by addressing their specific objectives and requirements, thereby allowing it to reach its full potential. The organisation will benefit in terms of time saved, redundant data being eliminated – thereby allowing the organisation to make informed decisions based on relevant data, improved methods of communication, innovative ways to teach content and make the organisation competitive, and overall customer and employee satisfaction due to ease of use.

5.3 Background Information

TuksRes Women in Leadership Academy is a non-profit organisation to equip young women in high school and university with certain personal, professional and leadership skills - which makes it a skills development organisation. The founder, directors, management and facilitators are all either staff of the university, previous students at the university or current students at the university. The organisation is of an academic nature, and as such, is affected by the demand for the type of skill's that are offered by the academy. The organisation is not primarily affected by normal economic supply and demand, however, due to recent fee crises, is affected by a decrease in budget from the university.

The current system is paper based, where most requirements and tasks are mainly completed by physically attending or signing a piece of paper and other platforms such as google docs and Facebook are used for events.

It is a young organization that is growing quickly and requires an economical and efficient system to fulfil its business requirements.

5.4 Overview of Current System

The TuksRes Women in Leadership Academy (TRWLA) currently uses a paper based system for most organizational functions. The different actors of the system are the directors, managers, facilitators and students. Throughout the year TRWLA organises and hosts different events, such as contact sessions for students, community service events, guest speaker events, socials and award ceremonies.

The process for contact sessions is as follows, to register students TRWLA goes to residences with sign-up sheets and take down the students' information and to attend the contact session the facilitator for a certain residence goes to the residence and physically presents the contact session to the students and the students sign a physical register to show they have attended that contact session. With the current system, a physical register must be signed by each of the student when attending a contact session,

the data is not captured or not stored anywhere, which is a problem when management need to analyse the attendance and profiles of the students.

The process to organize guest speaker events, socials and award ceremonies is tedious as all the supplier information needed to help organize events are on different platforms and there is no centralised system to go through to organise services such as catering and printing, this wastes time and can cause the people to perform extra unnecessary duties, if they are not up to date with the progress. To attend events, you RSVP on Facebook to say if you are attending or not.

The current system does not cater for any feedback to the academy, this could negatively impact the academy as management does not know if the current programs are successful or being optimally conducted. Information is stored in different locations, which can be misinterpreted and is redundant. There is no backup of this information, which is an issue if TRWLA want to analyse and review information, which can be misplaced or is lost.

5.5 Detailed Recommendations

Problems, Opportunities and Constraints Matrix

Project: Ad Victorium	Project Manager: Bes Liebenberg
Created by: Achal Seechoonparsad	Last Updated by: Achal Seechoonparsad
Date Created: 3 March 2017	Date Last Updated: 5 March 2017

CAUSE AND EFFECT ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
1. The system is paper based. 2. The system has no back up. 3. There is no centralised communication system. 4. There is not an exact process to organize an event. 5. There is no database. 6. There is no process for feedback. 7. Only certain suppliers/providers can be utilised.	1. Every piece of documentation needs to be safely stored. 2. Wastes paper. 3. Tedious to distribute information. 4. Management cannot review events or receive complaints. 5. Event planning can be slow. 6. The most economical suppliers may not be used. 7. Management cannot analyse and review the progress of the academy.	1. The system needs to have a database management system. 2. The system needs to be easily accessible for all users. 3. The system needs to have different access levels. 4. Each user must have access to the information, events and profiles that they need. 5. The system must have an easy method to contact many people at once.	1. The system needs to be economical as there is a low budget. 2. The system needs to accommodate many users 3. The system must always be accessible. 4. The system needs to have a "cloud" database. 5. The system must be secure. 6. The system needs to be completed within 8 months. 7. The system must be easy to

CAUSE AND EFFECT ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
8. There are no methods to generate reports. 9. No method to analyse student profiles. 10. Supplier/Provider information is not accessible to all members of management 11. All contact sessions are only physically presented. 12. Information referenced during contact	8. Management cannot make specific decisions based on students. 9. There is no other method for accessing contact session material. 10. Students may have problems with remembering information referenced. 11. Events and tasks can be difficult to track as there is no centralised system to manage them. 12. Management cannot view how the course	6. The system must be able to show all available supplier information to everyone who needs to contact suppliers. 7. The system must produce detailed reports on student progress, budget, attendance, content, graduates, certificates and stock. 8. The system must have the capability for users to edit their profile.	use and understand.

CAUSE AND EFFECT ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
<p>sessions is not available anywhere else.</p> <p>13. There is no set calendar for the academy.</p> <p>14. Difficult to track student progress.</p> <p>15. Registration is done using sign-up sheets.</p>	<p>is progressing or if anything needs to be changed.</p> <p>13. Contacting newly registered students can be time consuming.</p>	<p>9. The system must have an editable calendar.</p> <p>10. The calendar must be editable by certain users for events.</p> <p>11. The system must send out "push" email notifications.</p> <p>12. The system must have online notifications.</p> <p>13. The system must have a function for users to provide feedback.</p> <p>14. Management must have</p>	

CAUSE AND EFFECT ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
		<p>access to all users.</p> <p>15. The system must be able to accommodate for many users being online at the same time.</p> <p>16. The system must have a function to manage the budget (only accessible by certain members of management).</p> <p>17. The system must be able allow certain users to upload certain files.</p> <p>18. The system must measure student progress and</p>	

CAUSE AND EFFECT ANALYSIS		SYSTEM IMPROVEMENT OBJECTIVES	
Problem or Opportunity	Causes and Effects	System Objective	System Constraint
		<p>provide the students and management with the details.</p> <p>19. The system must have an inventory function.</p> <p>20. The system must have a function for management to access suppliers.</p> <p>21. The system must be compatible with certain social media pages.</p>	

5.6 Analysis of the Current System

The following Rich Picture Diagram represents the current system and some challenges each entity within the organization faces.

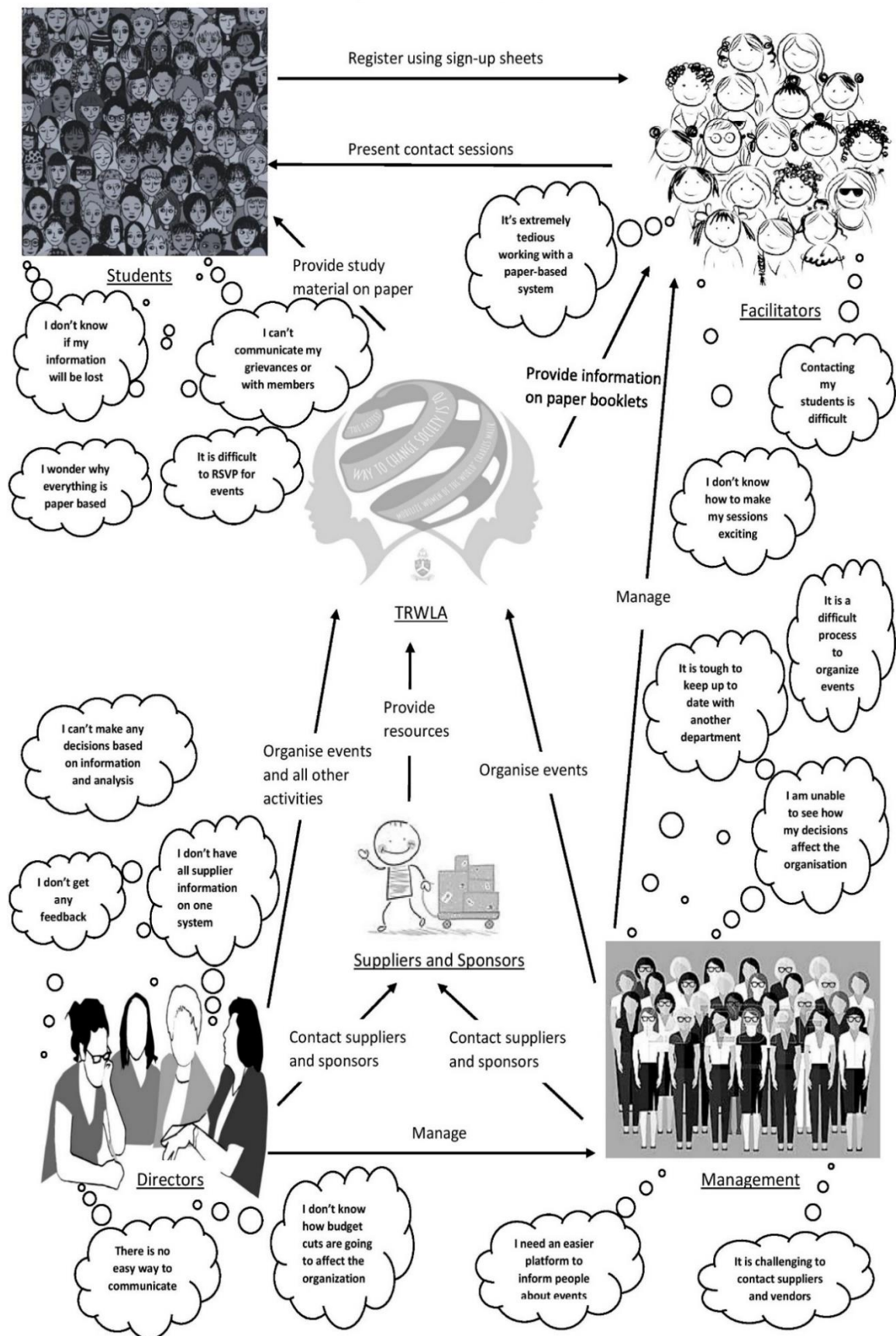
Rich Picture Diagram

Figure 2 - TRWLA Rich Picture

5.7 Conclusion

The above section contains a detailed problem analysis, this gives the reader a clear idea of each problem the business faces - including the system currently in use by the client, why that system is not the optimum solution, suggestions on what the optimum solution would be, and a motivation to the management of the organisation as to why they should go ahead with the proposed solution.

6. Requirements Analysis

6.1 Introduction

The following section of the project proposal contains the complete functional requirements analysis. The requirements will first be listed and numbered according to the sub-systems under which they fall. Once the requirements have been identified and listed, they will be explained in detail in a tabular format. The requirements detail includes the requirement number, the requirement name, the requirement text, the requirement title, the details and constraints of the requirement, the revision date and finally the level of priority of the requirements.

6.2 User Requirements

1. Manage Users

- 1.1 Create User
- 1.2 Search User
- 1.3 Update User
- 1.4 Delete User

2. Manage Employees

- 2.1 Create Employee
- 2.2 Search Employee

2.3 Update Employee

2.4 Delete Employee

2.5 Create Employee Type

2.6 Search Employee Type

2.7 Update Employee Type

2.8 Delete Employee Type

3. Manage Communication

3.1 Create Communication

3.2 Search Communication

3.3 Update Communication

3.4 Delete Communication

3.5 Create Feedback

3.6 Search Feedback

3.7 Update Feedback

3.8 Delete Feedback

4. Manage Students

4.1 Register Student

4.2 Search Student

4.3 Update Student

4.4 Delete Student

5. Manage Events

5.1 Create Event

5.2 Search Event

5.3 Update Event

5.4 Delete Event

5.5 Create Event Type

5.6 Search Event Type

5.7 Update Event Type

5.8 Delete Event Type

5.9 RSVP Event

5.10 Log Attendance

6. Manage Calendar

6.1 Add Calendar Event

6.2 Search Calendar Event

6.3 Update Calendar Event

6.4 Delete Calendar Event

7. Manage Budget

7.1 Create Budget Estimate very strict

7.2 Search Budget

7.3 Update Budget

8. Manage Content

8.1 Create Content Session

8.2 Search Content Session

8.3 Update Content Session

8.4 Delete Content Session

8.5 Create Content Theme

8.6 Search Content Theme

8.7 Update Content Theme

8.8 Delete Content Theme

8.9 Measure Student Progress

8.10 Log Class Attendance

9. Manage Supplier

9.1 Create Supplier

9.2 Search Supplier

9.3 Update Supplier

9.4 Delete Supplier

10. Manage Stock

10.1 Create Stock

10.2 Search Stock

10.3 Update Stock

10.4 Delete Stock

10.5 Order Stock

11. Marketing

11.1 Email Invitation

11.2 Create Blog Post

11.3 Accept Blog Post

11.4 Upload Photo

11.5 Search Photo

11.6 Delete Photo

11.7 Create Blog Post review

12. Reports

12.1 Generate Graduate List

12.2 Generate Class Attendance

12.3 Generate Event Attendance

12.4 Generate Certificate

12.5 Generate Progress Report

12.6 Generate Stock Report

12.7 Generate Budget Report

12.8 Create Content Report

12.9 Generate Statistics Report

13. Donations

13.1 Make Donations

6.3 Requirements Description

Requirement	Explanation
Requirement number:	1.1
Requirement title:	Create User
Requirement text:	The system must allow a user to be created.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must enter their details, username and password for their profile to be created. The user must be part of The University of Pretoria.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	1.2
Requirement title:	Search User
Requirement text:	Management must be able to search for a user.
Requirement type:	Functional Requirement
Requirement details and constraints:	When management searches for a user, the details of the user will be shown.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	1.3
Requirement title:	Update User
Requirement text:	A user must be able to update their user details.
Requirement type:	Functional Requirement
Requirement details and constraints:	A user must be able to update their user details, username and password. Only a user can update their details.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	1.4
Requirement title:	Delete User
Requirement text:	Management can delete a user from the system.
Requirement type:	Functional Requirement
Requirement details and constraints:	Management can delete a user from the system. Only certain members in management will be allowed to use this function.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	2.1
Requirement title:	Create Employee
Requirement text:	The system must allow the user to create a new employee.
Requirement type:	Functional Requirement
Requirement details and constraints:	All employee details including: Name, Surname, Date of Birth (DoB), Phone, Email, Address, ID Number and Employee Type must be added to the system. Employees may only be added by the Board of Directors regarding management and Management regarding Sub management and facilitators.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	2.2
Requirement title:	Search Employee
Requirement text:	The system must allow the user to search an employee.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a user searches for an employee, all details including: Name, Surname, DoB, Phone, Email, Address and ID must be displayed to the user. Management and Board of Directors may search Employees.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	2.3
Requirement title:	Update
Requirement text:	The system must allow the user to update employee details.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must allow the user to update employee details, all of which include: Name, Surname, DoB, Phone, Email, Address and ID. Only the Board of Directors may update employee details.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	2.4
Requirement title:	Delete Employee
Requirement text:	The system must allow the user to delete an employee.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be allowed to delete all information pertaining to an employee off of the system. This contains: Name, Surname, DoB, Phone, Email, Address and ID will be able to be deleted by the user. Only the Board of Directors will be able to delete and employee off of the system.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	2.5
Requirement title:	Add Employee Type
Requirement text:	The system must allow the user to add an employee type to the system.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to add an employee type to the system. This include: Employee type name, Employee type description. Only the Board of Directors and Management will be able to do this.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	2.6
Requirement title:	Search Employee Type
Requirement text:	The system will display the employee type to the user.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user will be able to use the system to search for an employee type. This will display the: Employee Type Name and the Employee Type description to the user. All will be able to search for the employee type.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	2.7
Requirement title:	Update Employee Type
Requirement text:	The system must allow the user to update an employee type.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to update the employee type on the system. This will include: Employee type name, Employee type Description. The Board of Directors and Management will be able to do this.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	2.8
Requirement title:	Delete Employee Type
Requirement text:	The system must allow the user to delete the employee type off of the system.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user will be able to delete the employee type of the system which includes: Employee Type Name and Employee Type description. Only management and Board of Directors will be able to do this.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	3.1
Requirement title:	Create Communication
Requirement text:	The system must allow the user to create messages to send to other users.
Requirement type:	Functional Requirement
Requirement details and constraints:	The communication messages should include the date, time, communication text and any other attachments. Contents of the communication should only be seen by the sender and receiver. As well as, being encrypted.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	3.2
Requirement title:	Search Communication
Requirement text:	The system must allow the user to search for any communications sent and received.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a user searches for a communication, the date, time, communication text and any other attachments should be displayed. All users may search for communication.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	3.3
Requirement title:	Update Communication
Requirement text:	The system must allow the user to update communication
Requirement type:	Functional Requirement
Requirement details and constraints:	When a user updates a communication, the date, time, communication text and any other attachments should be updated. All users may update a communication.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	3.4
Requirement title:	Delete Communication
Requirement text:	The system must allow the user to delete any communication they have created.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a user deletes a communication, the date, time, communication text and any other attachments should be deleted. All users may delete a communication.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	3.5
Requirement title:	Create Feedback
Requirement text:	The system must allow the user create a feedback post on any topic that related to the organisation.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to create a post where the: feedback description, username, date and time should be accompanied by the feedback.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	3.6
Requirement title:	Search Feedback
Requirement text:	The system must allow the user to search a feedback post on any topic that related to the organisation.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to search for a post where the: feedback description, username, date and time of the feedback post must be displayed by the system.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	3.7
Requirement title:	Update Feedback
Requirement text:	The system must allow the user to update a feedback post on any topic that related to the organisation.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to update a feedback post where the: feedback description, username, date and time of the feedback post must be updated by the system.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	3.8
Requirement title:	Delete Feedback
Requirement text:	The system must allow the user to delete a feedback post on any topic that related to the organisation.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to delete a feedback post where the: feedback description, username, date and time of the feedback post must be deleted by the system.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	4.1
Requirement title:	Register Student
Requirement text:	The system must allow the user to register a new student.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to register a new student. All student details including, full name, age, degree, year of study, email address and contact details. Only management can register a new student.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	4.2
Requirement title:	Search Student
Requirement text:	The system must allow the user to search for a registered student.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a user searches for a student, all the student details are located such as, full name, age, degree, year of study, email address, contact details as well as which courses the student is busy with. Only management and facilitators can search for a student.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	4.3
Requirement title:	Update Student
Requirement text:	The system must allow the user to update a student's details.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to update any student details, including: full name, age, degree, year of study, email address, contact details. Once any of these details have been changed, the student's details must be updated on the system.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	4.4
Requirement title:	Delete Student
Requirement text:	The system must allow the user to delete a student.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to delete all the student details from the system. Only management can delete students.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	5.1
Requirement title:	Create Event
Requirement text:	The system must allow the user to create a new event.
Requirement type:	Functional Requirement
Requirement details and constraints:	All event details, including: event name, event description, event type, event date must be added to the system. Only events approved by the events or community engagement teams may be added. Only management can create new events.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	5.2
Requirement title:	Search Event
Requirement text:	The system must allow the user to search an event.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a user searches an event, all the events details, including: event name, event description, event type, event date displayed by the system. All users may search events.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	5.3
Requirement title:	Update Event
Requirement text:	The system must allow the user to update an event.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to update any event details, including: event name, event description, event type, event date. Once any of these details have been changed the event must be updated on the system.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	5.4
Requirement title:	Delete Event
Requirement text:	The system must allow the user to delete an event.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to update any event details, including: event name, event description, event type, event date. Once any of these details have been changed the event must be updated on the system. Only management can delete events.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	5.5
Requirement title:	Create Event Type
Requirement text:	The system must allow the user to create an event type.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to create and event type, including: event type, event type description. Only management can create event types.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	5.6
Requirement title:	Search Event Type
Requirement text:	The system must search an event type.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must be able to search an event type. The system should be able to do this automatically, but management should also be able to search an event type.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	5.7
Requirement title:	Update Event Type
Requirement text:	The system must allow the user to update an event type.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to update any event type details, including: event type, event type description. Once any of these details have been changed the event type must be updated on the system. Only management can update event type.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	5.8
Requirement title:	Delete Event Type
Requirement text:	The system must allow the user to delete an event type.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to delete any event type. Once event type is deleted it must be removed from the system. Only management can delete event type.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	5.9
Requirement title:	RSVP Event
Requirement text:	The system must allow the user to RSVP to an event.
Requirement type:	Functional Requirement
Requirement details and constraints:	Once the user RSVP's to an event, their details must be added to the event's attendance list, including: name, surname, email, cell phone. All users can RSVP to an event
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	5.10
Requirement title:	Log Attendance
Requirement text:	The system must allow the user to log student attendance at an event.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to log student attendance at an event. The students details must be logged to the events attendance list, including: student name, student surname.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	6.1
Requirement title:	Add Calendar Event
Requirement text:	A user can add an event to the calendar.
Requirement type:	Functional Requirement
Requirement details and constraints:	A user can add an event and details, including date, time and place to the calendar. Only management and facilitators can add events and make them accessible to certain groups.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	6.2
Requirement title:	Search Calendar Event
Requirement text:	A user can search the calendar for events.
Requirement type:	Functional Requirement
Requirement details and constraints:	All users can search the calendar for an event. The details of the event will be displayed to the user.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	6.3
Requirement title:	Update Calendar Event
Requirement text:	Management and facilitators must be allowed to update a calendar event.
Requirement type:	Functional Requirement
Requirement details and constraints:	Management and facilitators must be able to update the details of a calendar event, including date, time and place.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	6.4
Requirement title:	Delete Calendar Event
Requirement text:	Management and facilitators must be able to delete a calendar event.
Requirement type:	Functional Requirement
Requirement details and constraints:	Management and facilitators must be able to delete a calendar event when necessary and it will be removed from the system.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	7.1
Requirement title:	Create Budget Estimate
Requirement text:	The system must allow the user to create holders for allocation of budget for the year. It will allow the user to calculate the requirements of the budget for TRWLA so that informed decisions may be made regarding the year's budget. This will include: Name of Allocation, Date of Allocation, Amounts Allocated, Signed off By, Amount Spent, Date Spent, Residual Money.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to add allocations to the budget and create placeholders for the budget. This will include spending towards: Catering, transport, events, workshops, guest speakers and printers to name a few. The system will then dynamically calculate the remaining budget for the year and display it to the user constantly. Only management and Board of Directors will have access to this.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	7.2
Requirement title:	Search Budget Estimate
Requirement text:	The system must allow the user to search for the budget stipulated by TRWLA management at the beginning of the financial year.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to search for the budget laid out by TRWLA at the beginning of the financial year. This will display the: Name of Allocation, Date of Allocation, Amounts Allocated, Signed off By, Amount Spent, Date Spent and Residual Money. Only Financial Management and Board of Directors will have access to this.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	7.3
Requirement title:	Update Budget Estimate
Requirement text:	The system will allow users to update the budget stipulated at the beginning of TRWLA's financial year based off of residual profits.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to edit allocation of budget within pre-stipulated budget allocation points. This will allow the update of: Name of Allocation, Date of Allocation, Amounts Allocated, Signed off By, Amount Spent, Date Spent and Residual Money. It will dynamically update and display the remaining budget amount to the user.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Medium.

Requirement	Explanation
Requirement number:	8.1
Requirement title:	Create Content Session
Requirement text:	The system must allow the user to create a content session.
Requirement type:	Functional Requirement
Requirement details and constraints:	All content session details, including: content session name, content session description, content session link. Only management can create a content session.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	8.2
Requirement title:	Search Content Session
Requirement text:	The system must allow the user to search a content session.
Requirement type:	Functional Requirement
Requirement details and constraints:	All content session details, including: content session name, content session description, content session link must be displayed to the user by the system. The system must be able to automatically search a content session. Students can search a content session.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	8.3
Requirement title:	Update Content Session
Requirement text:	The system must allow the user to update a content session.
Requirement type:	Functional Requirement
Requirement details and constraints:	Any details that are changed must be updated on the system. Only management can update a content session.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	8.4
Requirement title:	Delete Content Session
Requirement text:	The system must allow the user to delete a content session.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a content session is deleted it must be completely removed from the system. Only management can delete a content session.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	8.5
Requirement title:	Create Content Theme
Requirement text:	The system must allow the user to create a content theme.
Requirement type:	Functional Requirement
Requirement details and constraints:	All content theme details must be added to the system, including: content theme, content theme description. Only management can add a content theme.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	8.6
Requirement title:	Search Content Theme
Requirement text:	The system must search a content theme.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must be able to automatically search content themes, although management must also be able to search content themes.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	8.7
Requirement title:	Update Content Theme
Requirement text:	The system must update a content theme.
Requirement type:	Functional Requirement
Requirement details and constraints:	When any details of the content theme are changed it must be updated on the system. Only management can update the content theme.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	8.8
Requirement title:	Delete Content Theme
Requirement text:	The system must delete a content theme.
Requirement type:	Functional Requirement
Requirement details and constraints:	When a content theme is deleted it must be removed from the system. Only management can delete content themes.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	8.9
Requirement title:	Measure Student Progress
Requirement text:	The system must record, measure and display the student's progress throughout the year.
Requirement type:	Functional Requirement
Requirement details and constraints:	Each time the student completes a task the system my re-calculate the students' progress. This will be done automatically.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	8.10
Requirement title:	Log Class Attendance
Requirement text:	The system must log class attendance
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must save all the details of students that attended the content session. Only managers can log class attendance.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	9.1
Requirement title:	Create Supplier
Requirement text:	The system should allow the user to create a supplier.
Requirement type:	Functional Requirement
Requirement details and constraints:	The supplier's details such as: supplier name, supplier address, supplier contact person, supplier contact number should be added to the system. Only management should be able to create suppliers
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	9.2
Requirement title:	Search Supplier
Requirement text:	The system should allow the user to search a supplier.
Requirement type:	Functional Requirement
Requirement details and constraints:	The supplier's details such as: supplier name, supplier address, supplier contact person, supplier contact number should be displayed by the system. All users should be able to search suppliers.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	9.3
Requirement title:	Update Supplier
Requirement text:	The system should allow the user to update a supplier.
Requirement type:	Functional Requirement
Requirement details and constraints:	The supplier's details such as: supplier name, supplier address, supplier contact person, supplier contact number should be updated by the system. Only management should be able to update the suppliers.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	9.4
Requirement title:	Delete Supplier
Requirement text:	The system should allow the user to delete a supplier.
Requirement type:	Functional Requirement
Requirement details and constraints:	The supplier's details such as: supplier name, supplier address, supplier contact person, supplier contact number should be deleted by the system. Only management should be able to delete the suppliers.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	10.1
Requirement title:	Create Stock
Requirement text:	The system must allow the user to create stock.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to create stock details, including: Description, Stock item name, Quantity and Price. Only management can create stock.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	10.2
Requirement title:	Search Stock
Requirement text:	The system must allow the user to search for stock.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to locate stock details, including: Description, Stock item name, Quantity and Price. Only management can search for stock items.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	10.3
Requirement title:	Update Stock
Requirement text:	The user must be able to update stock item details.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must allow the user to update stock item details, including: Description, Stock item name, Quantity and Price. Once any of these details have been changed, the stock item must be updated on the system.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	10.4
Requirement title:	Delete Stock
Requirement text:	The system must allow the user to delete a stock item.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to delete any stock item. Once stock item is deleted it must be removed from the system. Only management can delete a stock item.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	10.5
Requirement title:	Order stock
Requirement text:	The system must allow the user to order stock from a supplier.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be able to locate a supplier and indicate what stock they would like to order. Details include, Stock Item Name and Quantity. Only management can order stock.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	11.1
Requirement title:	Send Event Invite
Requirement text:	The system must send an event invitation
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must save the invitation to the system and email it to the relevant parties. Only management can send an invite.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	11.2
Requirement title:	Upload Blog Post
Requirement text:	The system save a blog post.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must save a blog post and hold it on standby for approval by management. Anyone can upload a blog post.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	11.3
Requirement title:	Accept Blog Post
Requirement text:	The system must allow the user accept and display a blog post.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must accept and display a blog post. Only management can accept a blog post.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Medium

Requirement	Explanation
Requirement number:	11.4
Requirement title:	Upload Photo
Requirement text:	The system will allow the user to upload a photo onto the TRWLA website.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user will be able to upload a photo onto the website. When uploaded, the image will be sent to Emily review. Once Emily has approved the phot, the image will be displayed on the TRWLA gallery so that users of the system both logged in and not will be allowed to see them. The photos uploaded will be grouped together both by date as well as by album if stipulated when uploading them. Only logged in users may upload photos.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	11.5
Requirement title:	Search Photo
Requirement text:	The system will allow the user to search for a photo displayed on the web page's gallery.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user will be allowed to search for a photo on the system based off of the date that it was posted as well as the album that it might reside in. All users may search for a photo.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	High.

Requirement	Explanation
Requirement number:	11.6
Requirement title:	Delete Photo
Requirement text:	The system must allow the user to delete the photo off of the TRWLA database.
Requirement type:	Functional Requirement
Requirement details and constraints:	If a user wishes for a photo to be deleted, they must contact Emily either via email or by clicking the delete button. Emily will receive notification of this and follow up on the photo deletion first before deleting the image. Only logged in users may make use of the delete button while any user will be able to email Emily to ask her to remove the photo.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	11.7
Requirement title:	Create Blog Post Review
Requirement text:	The system will allow users to create a review based on an existing blog post on the TRWLA system.
Requirement type:	Functional Requirement
Requirement details and constraints:	The user must be allowed to create a review on an existing blog post on the TRWLA system. The user must be logged onto the system in order to make a review on the blog post. The review will include the information of the review as well as the name of the user that reviewed it and the date of the review. Only logged in users may review a blog post.
Revision date and Revision number:	2017-03-05 Version 1.0
Criticality/Priority:	Medium.

Requirement	Explanation
Requirement number:	12.1
Requirement title:	Generate Graduate List
Requirement text:	The system must generate a list of graduates.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must generate a list of graduates at the end of the course based on the requirements set out by the course coordinator. The students who meet these requirements will be added to the list of graduates.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.2
Requirement title:	Generate Class Attendance
Requirement text:	The system must generate a class attendance report for management.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must generate a class attendance report for management. This report will show the details of students and their attendance. Management can analyse and take further action based on the attendance report.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.3
Requirement title:	Generate Event Attendance
Requirement text:	The system must generate an event attendance report.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must generate a report on the event attendance for management. This report must show different types of events, the details and the attendance figures for each event.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.4
Requirement title:	Generate Certificate
Requirement text:	The system must generate a certificate for graduates.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must generate a certificate for each student on the graduate list. These certificates will be accessible by management and the specific student that it is awarded to.
Revision date and Revision number:	2015-03-05 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.5
Requirement title:	Generate Progress Report
Requirement text:	The system must generate a progress report on the students.
Requirement type:	Functional Requirement
Requirement details and constraints:	Students activity data in the content subsystem will be tracked by the system. The data will be aggregated to generate a report to provide perspective whether a student is meeting the minimum criteria or not. Only management will be allowed to view this report.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.6
Requirement title:	Generate Stock Report
Requirement text:	The system must generate a report on stock management activity.
Requirement type:	Functional Requirement
Requirement details and constraints:	All data captured in the manage stock subsystem will be tracked by the system. The data will be aggregated to generate a report to display what stock has been created, searched for, updated and deleted. Only management will be allowed to view this report.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.7
Requirement title:	Generate Budget Report
Requirement text:	The system must generate a report on all budgets created in the system
Requirement type:	Functional Requirement
Requirement details and constraints:	All data captured in the manage budget subsystem will be tracked by the system. The data will be used to display financial statistics on all budget related activity conducted by users. Only management will be allowed access to this sensitive data.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.8
Requirement title:	Create Content Report
Requirement text:	The system must generate a report on content created in the system
Requirement type:	Functional Requirement
Requirement details and constraints:	All data captured in the manage content subsystem will be tracked by the system. Data will be aggregated to create insight into what content is being created and how it is received by those who consume it. Student progress and class attendance will also be included within these reports. Which will be accessible to facilitators and management.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	High

Requirement	Explanation
Requirement number:	12.9
Requirement title:	Generate Statistics Report
Requirement text:	The system must generate a statistics report.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must allow only admin to generate a statistics report
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

Requirement	Explanation
Requirement number:	13.1
Requirement title:	Make Donation
Requirement text:	The system must allow the user to make a donation.
Requirement type:	Functional Requirement
Requirement details and constraints:	The system must allow the user to make a donation. Anyone can make a donation.
Revision date and Revision number:	2017-03-04 Version 1.0
Criticality/Priority:	Low

6.4 Use Case Diagram

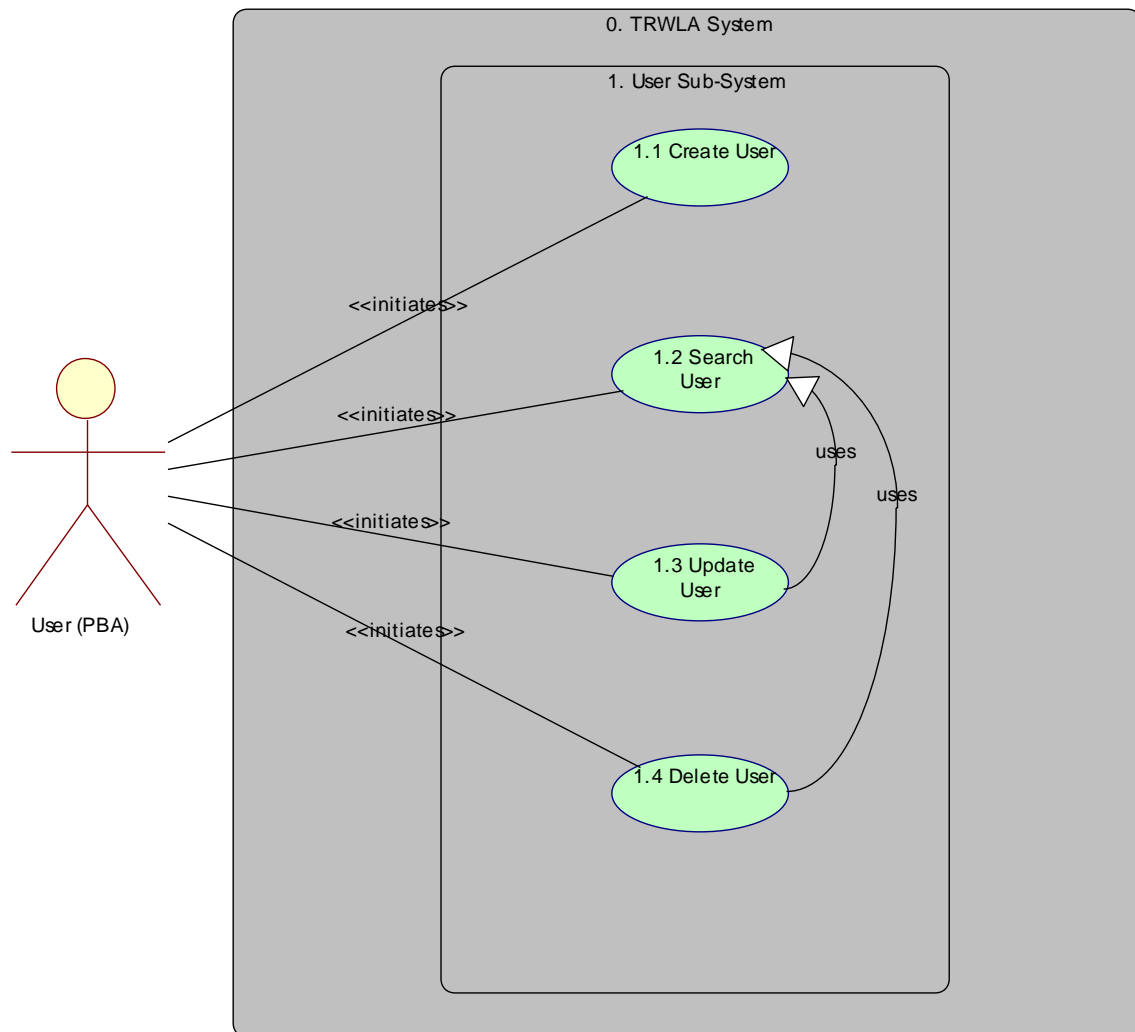


Figure 3 - User Sub System

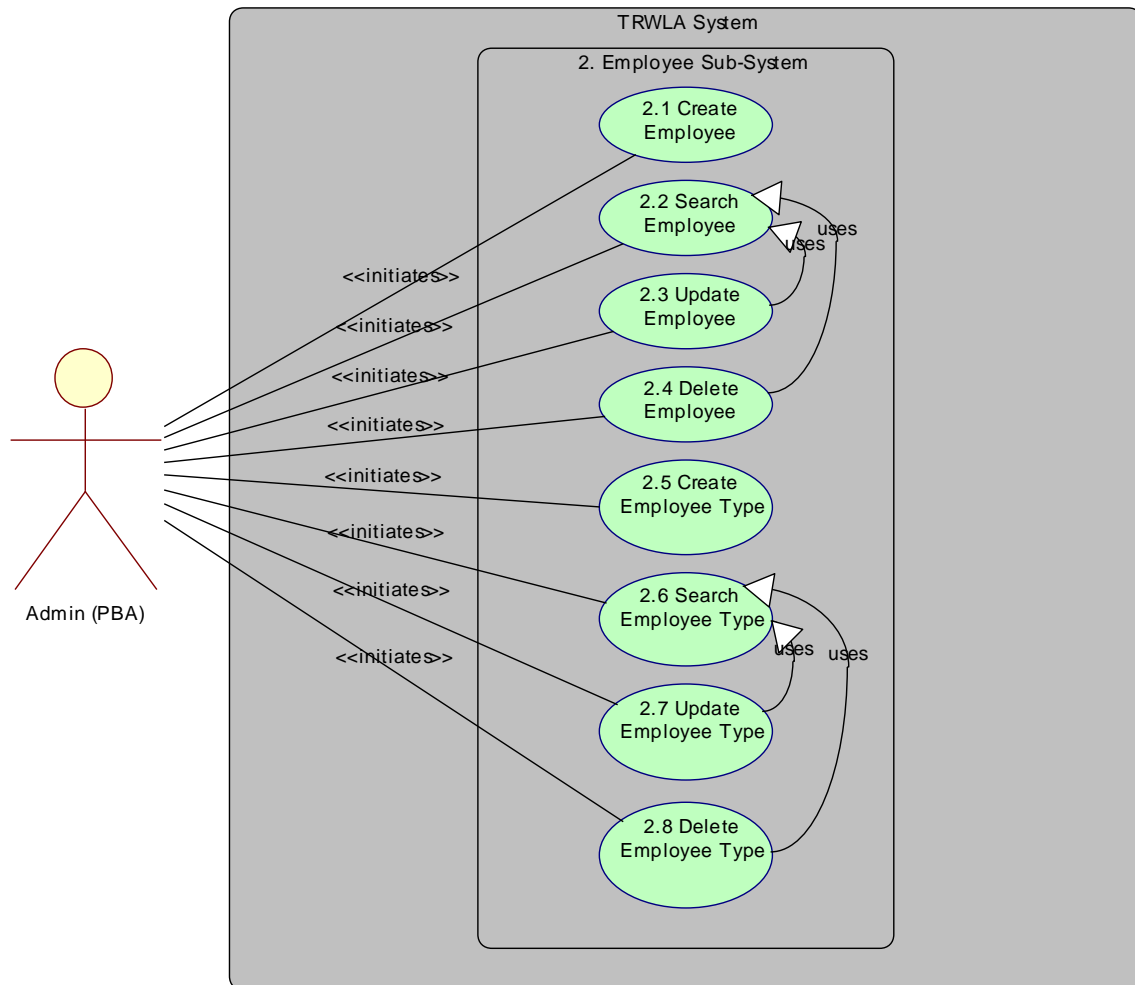


Figure 4 - Employee Sub System

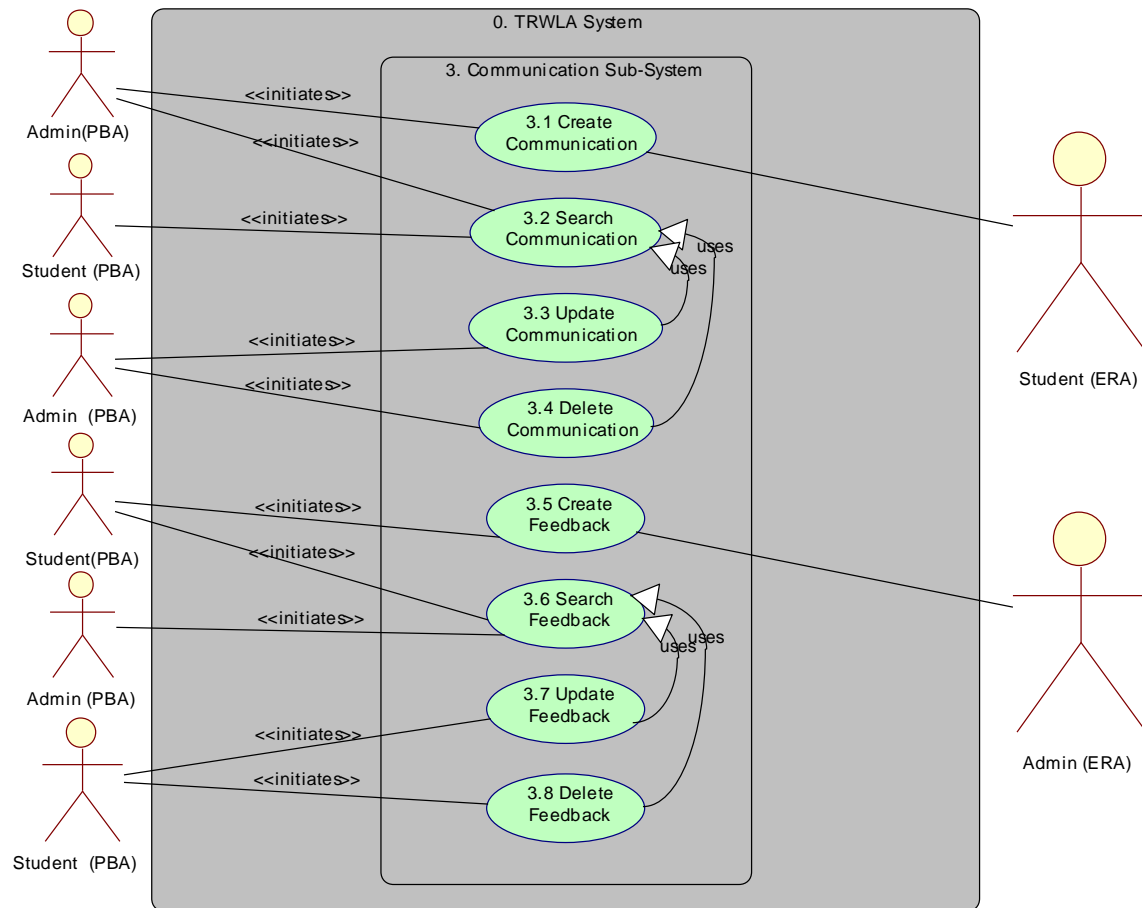


Figure 5 - Communication Sub System

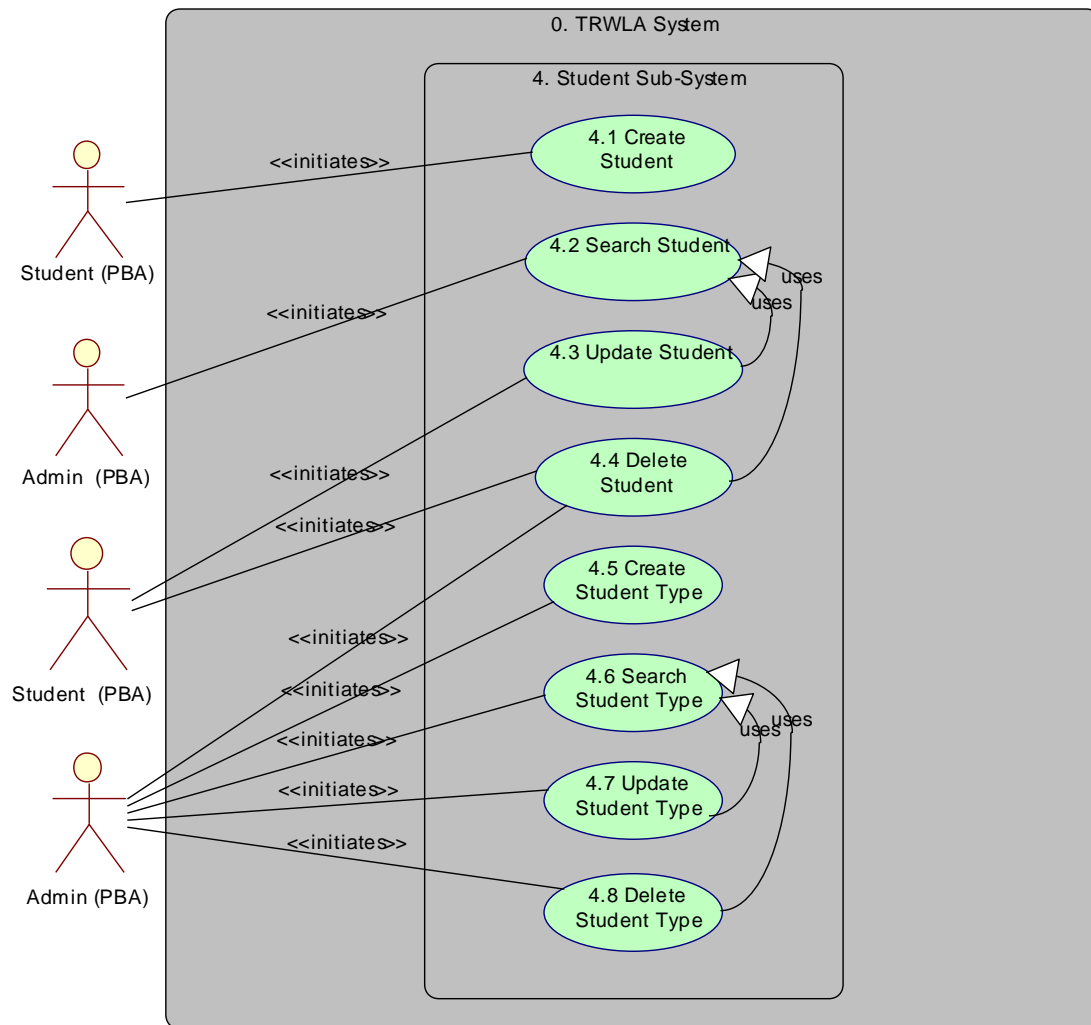


Figure 6- Student Sub System

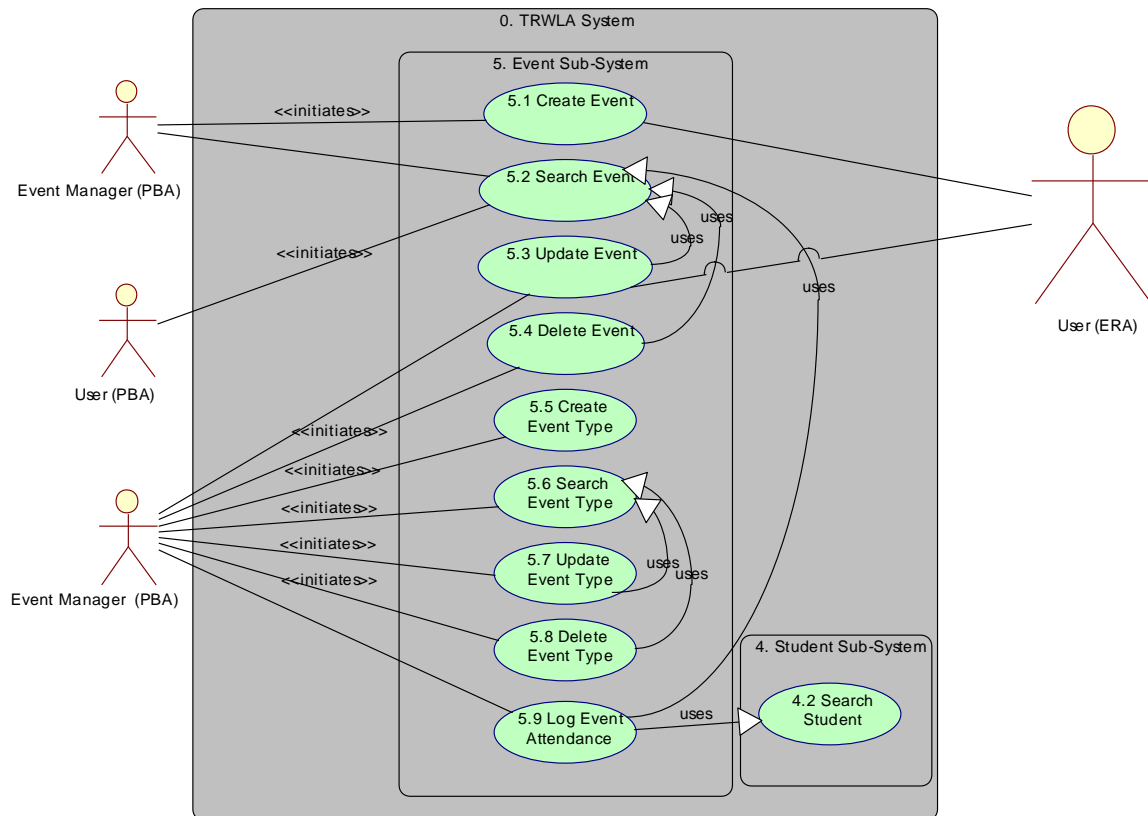


Figure 7 - Event Sub System

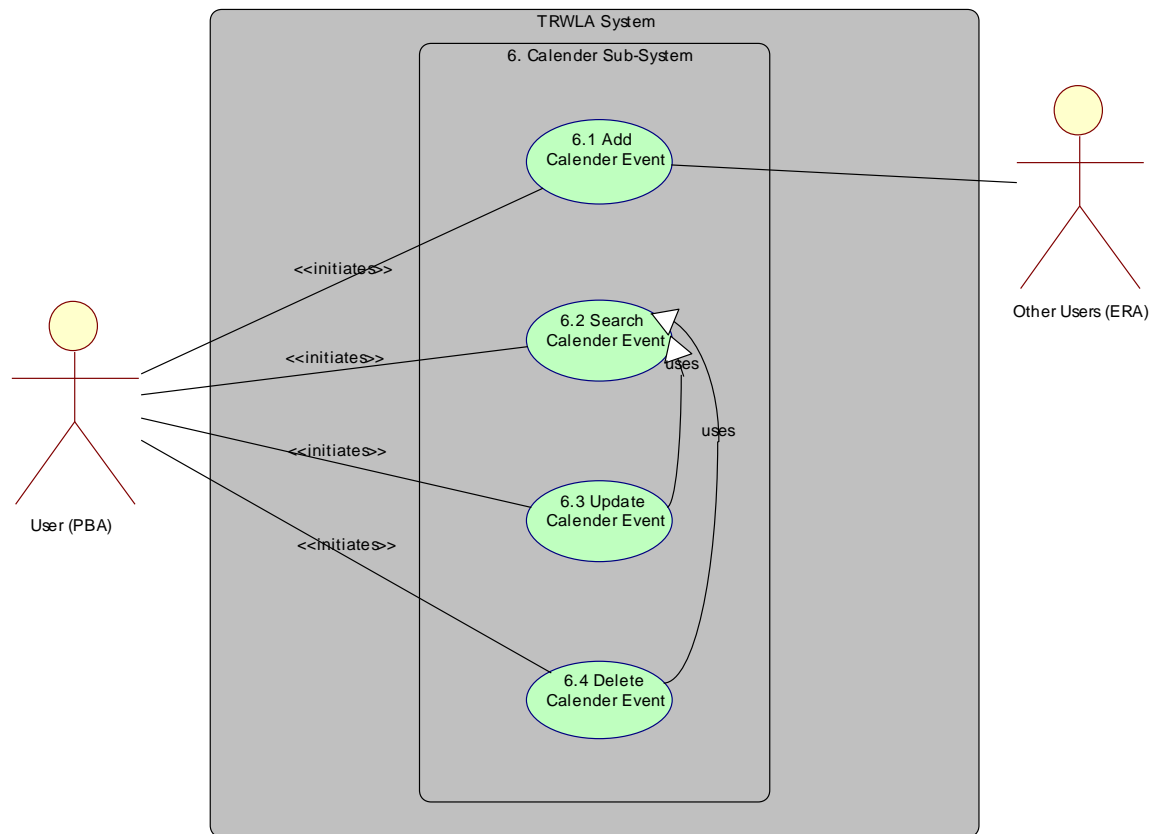


Figure 8- Calendar Sub System

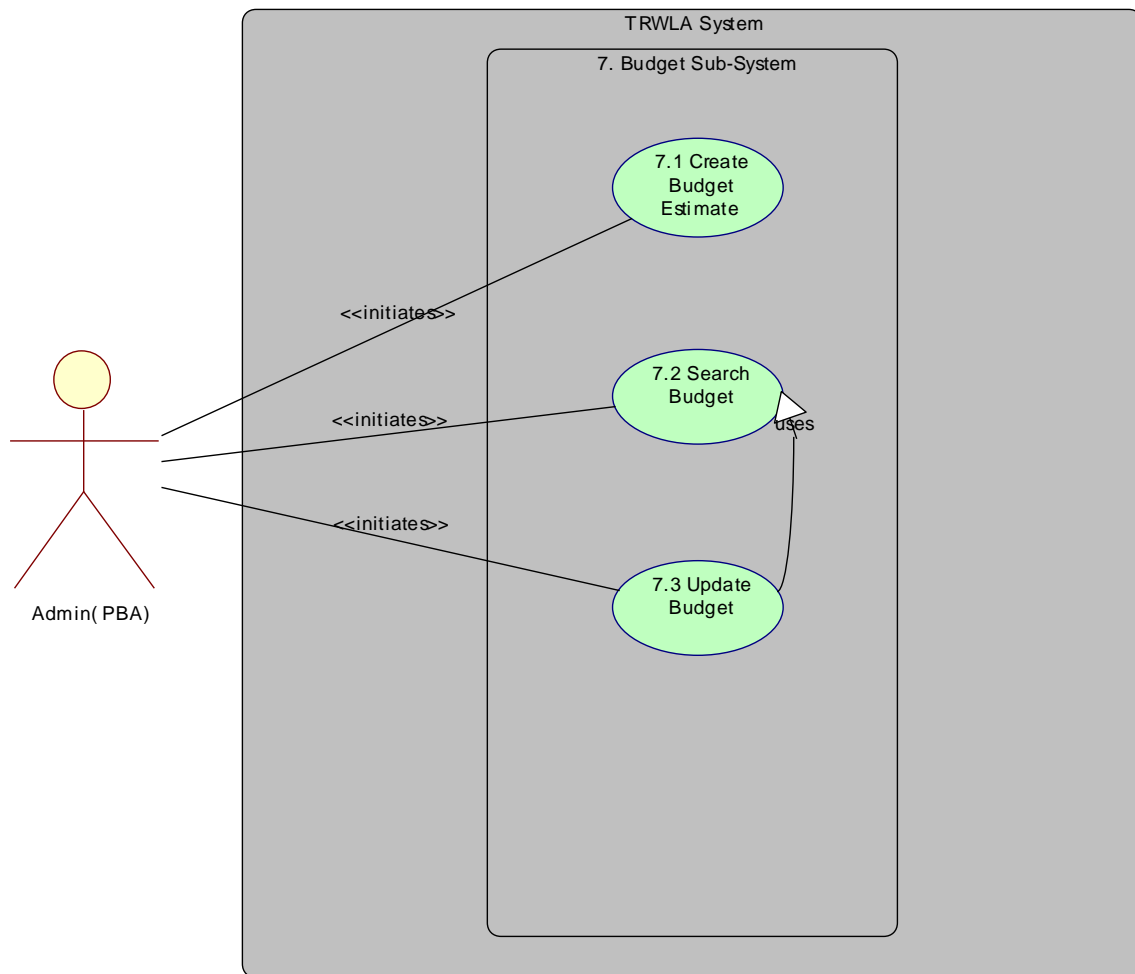


Figure 9- Budget Sub System

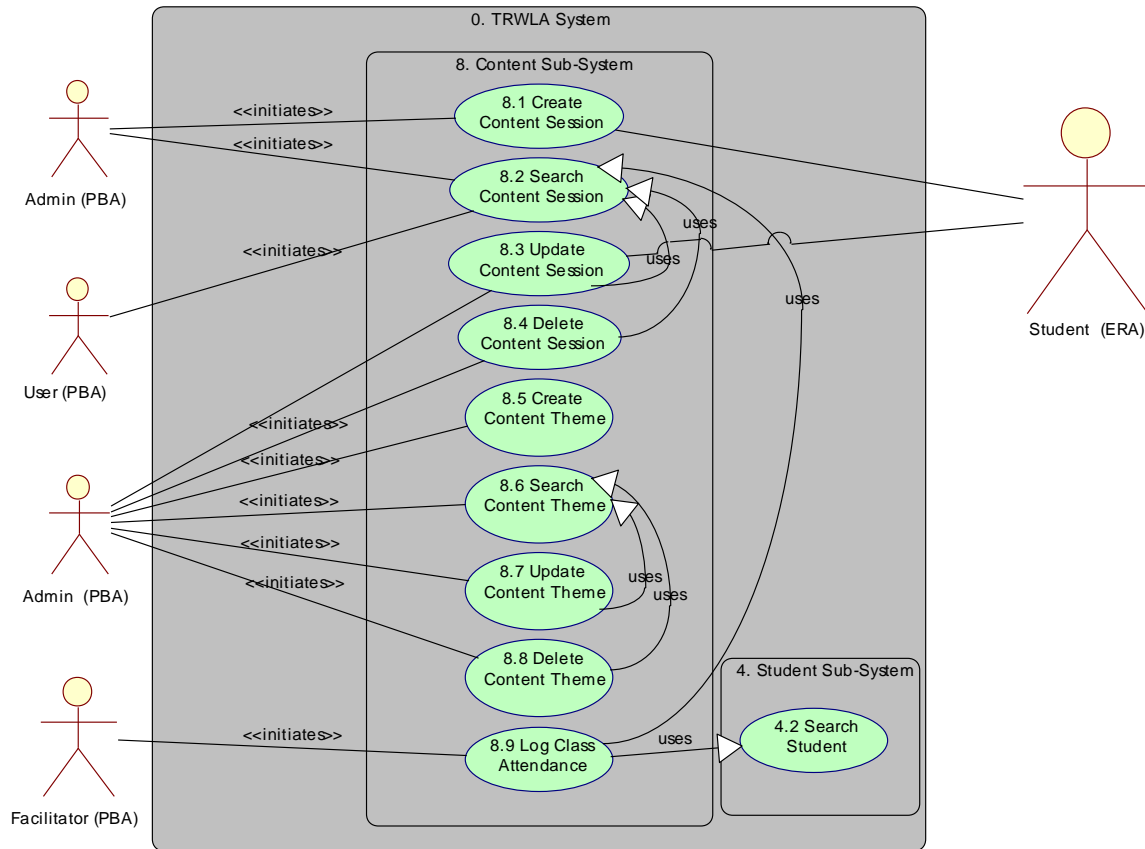


Figure 10 - Content Sub System

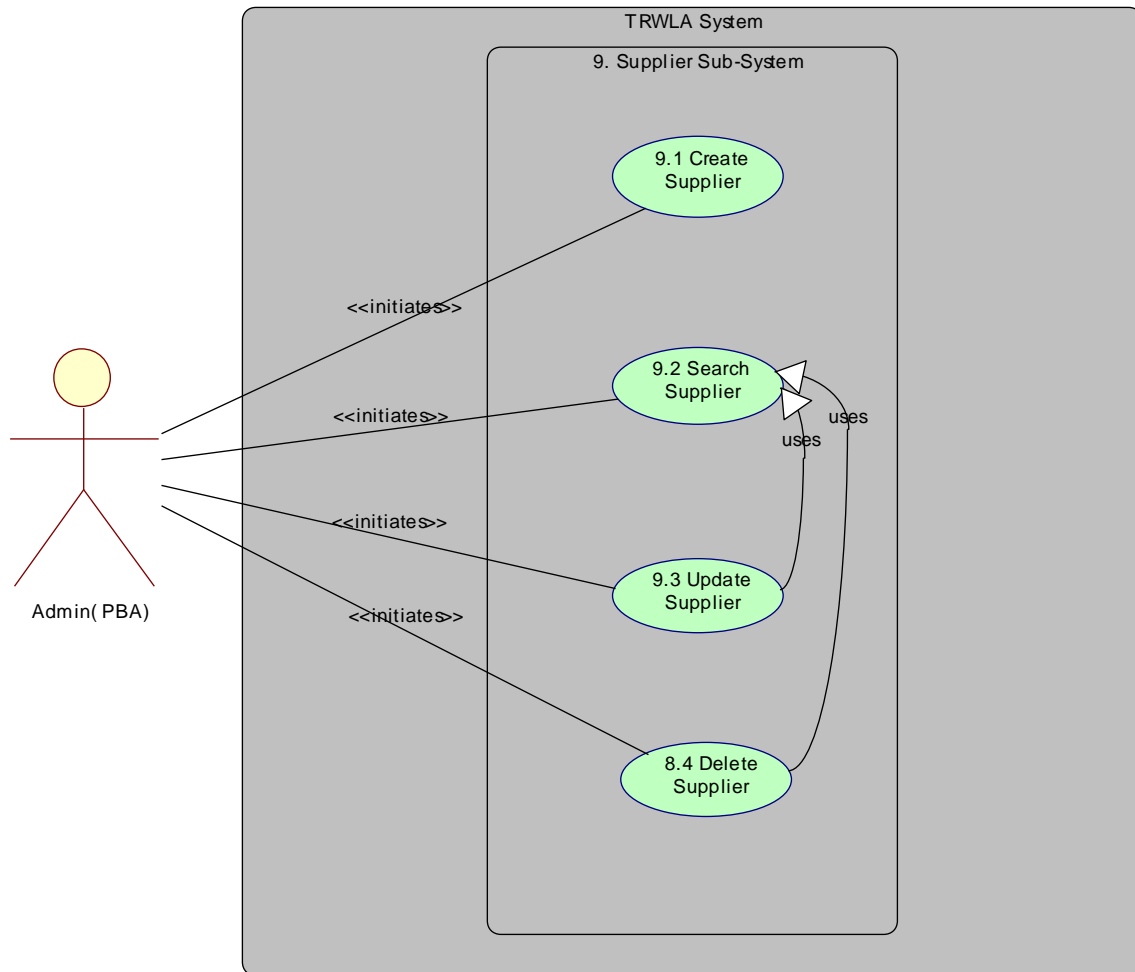


Figure 11- Supplier Sub System

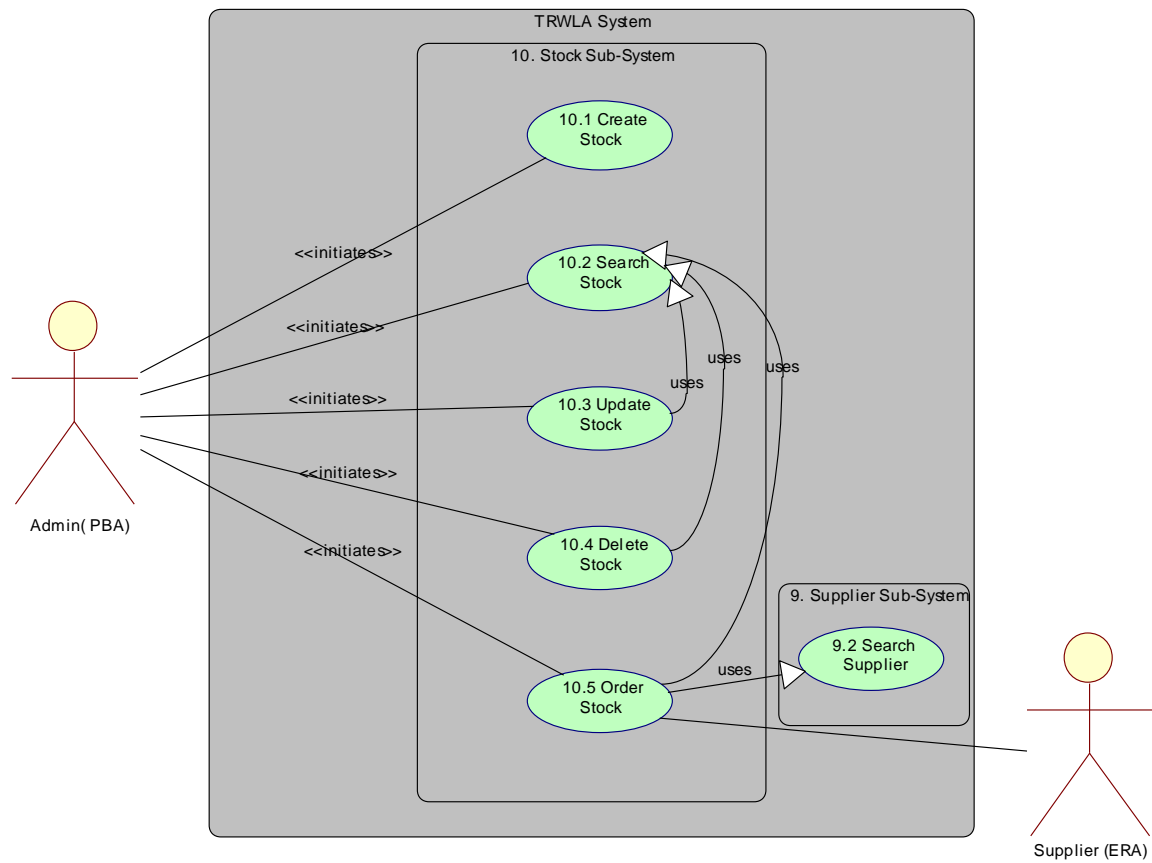


Figure 12- Stock Sub System

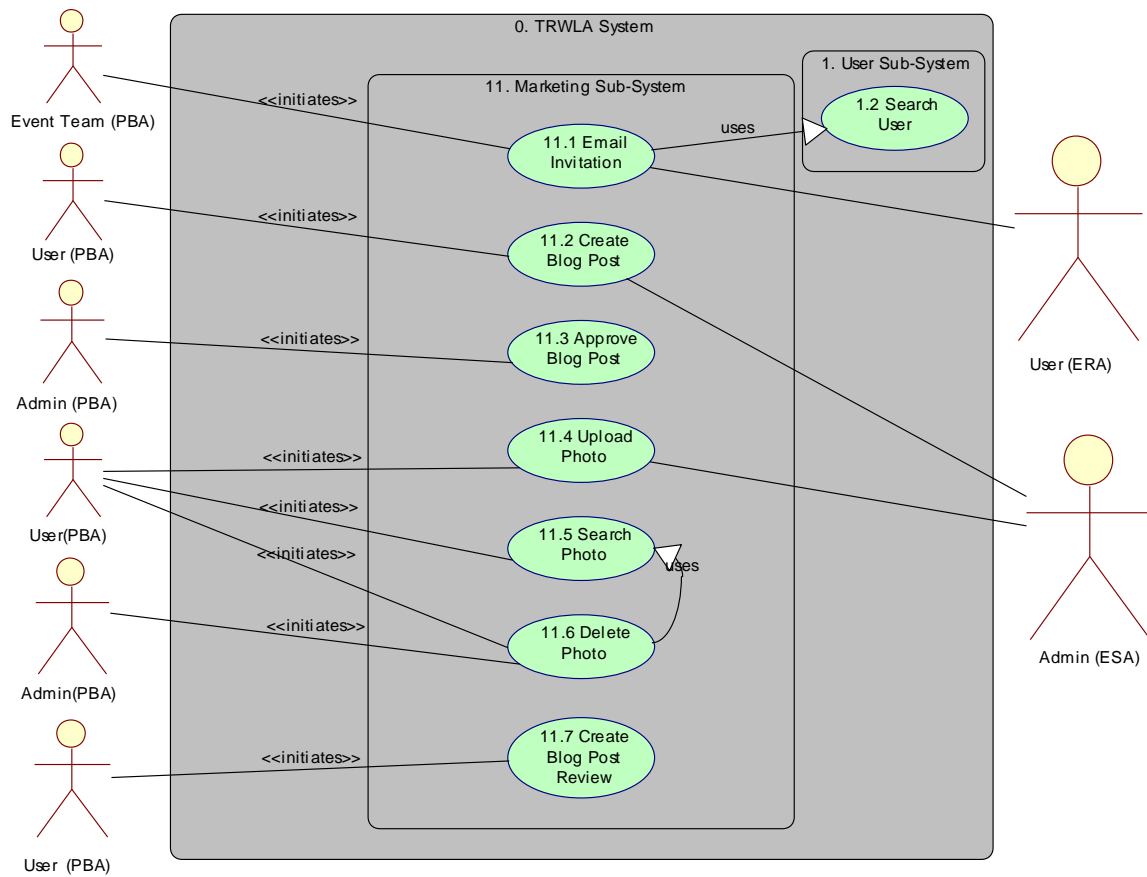


Figure 13- Marketing Sub System

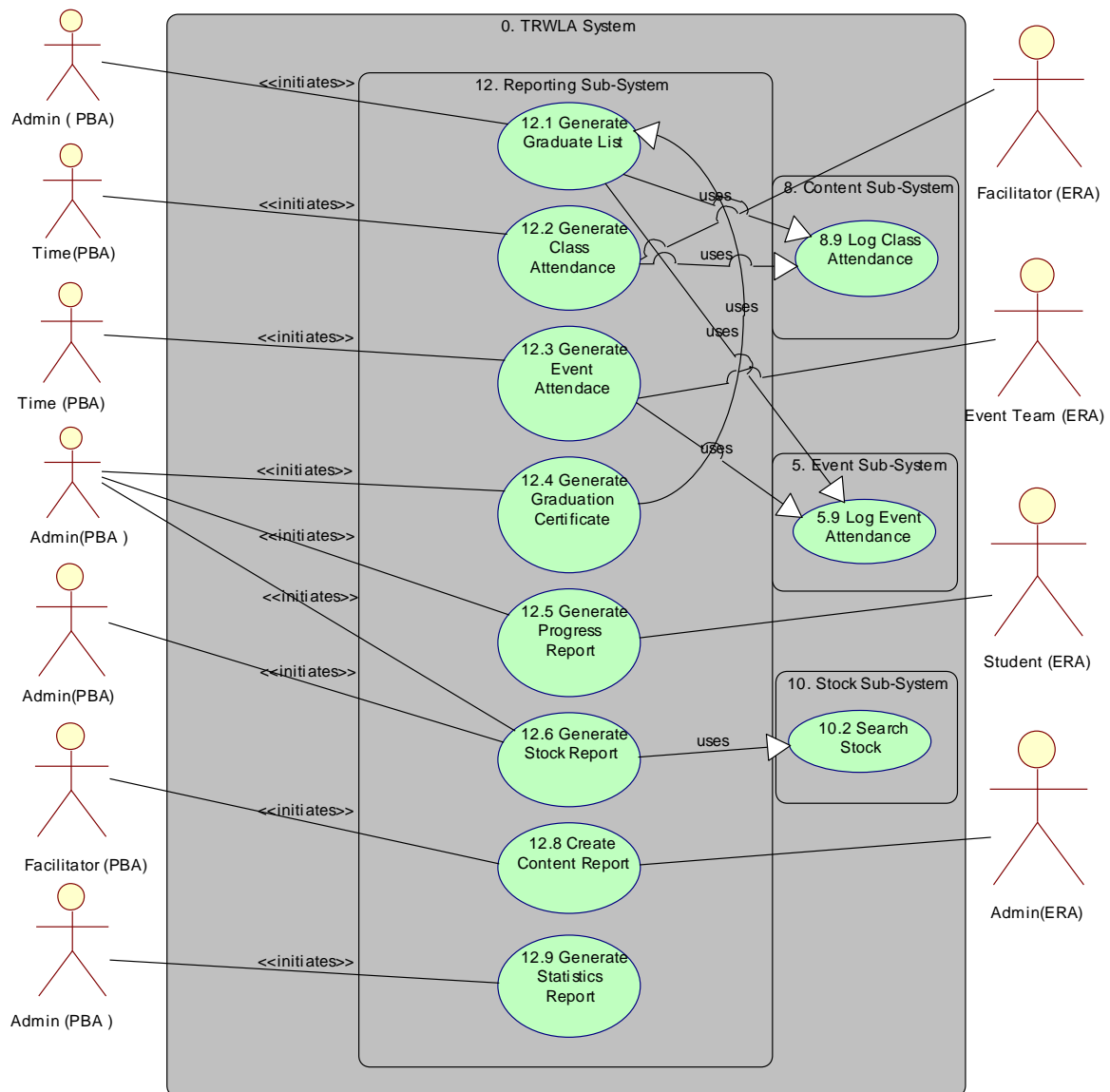


Figure 14- Report Sub System

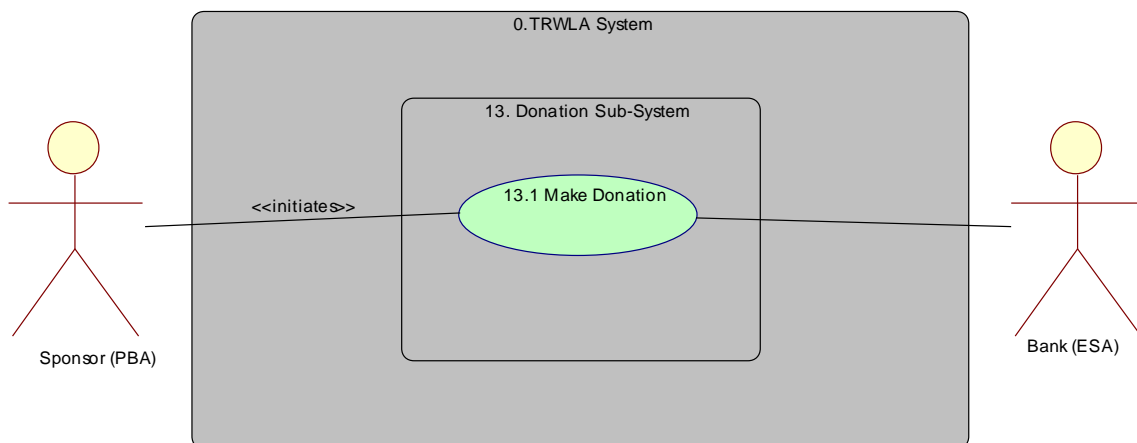


Figure 15 - Donation Sub System

6.5 Conclusion

The previous section dealt with the requirements identification, description and depiction. This was achieved by means of listing the requirements of the system, describing and prioritising them in a tabular format and then graphically representing them as use cases within a use case diagram.

7. Decision Analysis

7.1 Introduction

The purpose of a feasibility analysis is to determine whether an organization should proceed with a project or not. It identifies the different options that an organization can implement, as well as their costs, benefits and risks. The three candidates below have been identified as they best suit the business need of the organization. All three candidates will transform the organization from their current paper-based system to a more automated system. The following categories will be discussed and analyzed below; Operational, Technical, Economical and Schedule Feasibility.

7.2 Feasibility Analysis

PROJECT:	Ad Victorium	PROJECT MANAGER:	Bes Liebenberg
CREATED BY:	Jacquiline Lawler	LAST UPDATED BY:	Jacquiline Lawler
DATE CREATED:	2nd March 2017	DATE LAST UPDATED:	4th March 2017

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
Description		An ASP.NET web app with a SQL	Create a Microsoft Sharepoint website.	Create iOS and Android apps with a Firebase DBMS

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
		DBMS all hosted on Web Africa.		
Operational Feasibility Functionality. A description of to what degree the candidate would benefit the organization and how well the system would work.		With the DBMS, the organization would be able to move away from their current paper-based system and minimize redundancy. TRWLA will also be able to gain access to the system from any location because there is no software needed to be installed. With regards to the website, the organization would be able to communicate effectively with current and potential students, facilitators, and as well as sponsors. Both the website	Sharepoint is a Content Management System that has the ability to create an intranet for an organization. With the ability to upload documents in a central place, easily separate the different organizational functions and the many customizable options it will allow TRWLA to work in a new way together.	The organization will obtain the benefits of moving away from a paper-based system and minimize redundancy. It will also have an effective form of communication with its members and sponsors, such as from candidate 1 and 2. The system will be available on two platforms that serve a wide variety of devices.

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
		and the DBMS will be web-based.		
Political. A description of how well received this solution would be from both user management, user, and organization perspective.	30%	Members would appreciate that the system can be accessed from any location and on any computer since the system will be web-based. It would also be well received as the organization would not need to install software or pay for licensing fees. Score: 90	Members would appreciate that the system can be accessed from any location and on any computer since the system will be web-based. It would also be well received as the organization would not need to install software or pay for licensing fees. Score: 90	Members would appreciate that the system will function on their mobile phones but this might cause problems if some members in management or users, do not have a smartphone. Score: 75

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
Technical Feasibility Technology. An assessment of the maturity, availability (or ability to acquire), and desirability of the computer technology needed to support this candidate.	30%	The organization would use existing hardware and no software needs to be installed. The system will be accessible on mobile platforms.	The organization would use existing hardware and no software needs to be installed. The system will be accessible on mobile platforms.	The organization would be using their existing personal mobile devices to access the system. It would just need to be downloaded from either the Apple App Store or Google Playstore.
Expertise.		The DBMS can be developed by our	Our team does not have the	They will need to learn programming

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
An assessment to the technical expertise needed to develop, operate, and maintain the candidate system.		INF team as well as the website and it will be user friendly for all members involved. Members would be required to learn the system and maintain the website over time.	technical expertise to create the system in Sharepoint. Hence we won't be able to provide any support for our client's requirements and cannot maintain the system. Furthermore, it also limits our abilities to configure the system to fulfill any of our proposed choices within the complexity matrix.	languages such as: Swift, Objective-c and Java to create apps for the respective platforms would be a roadblock. As well as the need for an Apple Macbook to access the IDE to enable us to develop for ios alone is also a barrier.
		Score: 85	Score: 50	Score: 50
Economic Feasibility	30%			

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
Cost to Develop		¹ R303 first month, R 2491.99 per year	² R234.30 first month R 1667.71 per year	³ R1941.54 first month R 5199.14 per year
Payback period (discounted):		1 year 2 months (based on a BEP analysis of 3 years)	1 year 1 month (based on a BEP analysis of 3 years)	1 year 5 months (based on a BEP analysis of 3 years)
Net present value:		R302779.95 (based on an analysis of 3 years)	R305636.18 (based on an analysis of 3 years)	R293399.34 (based on an analysis of 3 years)
Detailed calculations:		¹ R199 p/m(hosting) + R103.99 p/y (domain name)	² R130.31 per user/ per month (\$10) + R103.99 p/y (domain name)	³ R325.76 (google play store once-off - 25\$) + R1290,02(Apple app store - \$99 per year) + R325,76 firebase dbms 25\$ per month)

Feasibility Criteria	Weight	Candidate 1: Web App	Candidate 2: Install CMS	Candidate 3: Create Mobile Apps
		Please see below table for more detailed calculations. Score: 80	Please see below table for more detailed calculations. Score: 90	Please see below table for more detailed calculations. Score: 70
Schedule Feasibility An assessment of how long the solution will take to design and implement.	10%	7 months Score: 80	7 months Score: 80	7 months Score: 80
Ranking:	100%	84.5 %	77%	66.5%

7.3 Details of Analysis

Organizational Feasibility:

Candidate 1: Both TRWLA management and the system users will benefit from the development of the system because it will give them a platform to perform their daily processes without the redundancy and inefficient use of the current paper-based system. This will also provide the students with an effective way of accessing teaching content and track their progress. The users will be able to communicate effectively with one another without the major costs of having to install software on all computers. The benefit of the INF team developing the website is that the

organization can personalize their website according to what suits their needs and preferences because they have the final sign-off to the system.

Candidate 2: The details stated above are the same for this candidate but the system will be hosted on Microsoft SharePoint, which is a content management system that allows the user to access content on one central location. This also allows the organization to separate different functionalities and customize their system accordingly.

Candidate 3: The details stated in candidate 1 are also applicable here whereby TRWLA would benefit from this system because it is based on two mobile platforms namely Google Play and Apple Store. Issues might arise however if a user does not have a smartphone to access the system.

Technical Feasibility:

Candidate 1: With regards to the technical feasibility, TRWLA would not need to install any software as the system will be web-based and hosted online. The organization would also not need to upgrade their existing software which is an added bonus. The system will be implemented by the INF team and there will be no need for professional expertise.

Candidate 2: A system on SharePoint will not be feasible to implement as the INF team does not have the knowledge or expertise to program with this software. Although the software would benefit the organization, TRWLA would have to hire professional expertise elsewhere.

Candidate 3: With regards to this candidate, the organization would have to learn software like Java, Objective-C and Swift in order to maintain their system on these platforms. An Apple Macbook is also required in order to program for any IOS application would could also cause a problem if no one in the organisation has this hardware.

Economic Feasibility:

Candidate 1: Cost to Develop includes R199 per month for hosting for 12 months as well as the R103.99 per year for the domain name.

Pay Back Period is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		¹ 120000	² 130000	130000	380000
Total Costs	2491.99	2491.99	2491.99	2491.99	9967.96
Net Benefits	(2491.99)	117508.01	127508.01	127508.01	370032.04
Cumulative Net Cash Flow	(2491.99)	115016.02	242524.03	370032.04	

¹The R120000 is the budget that TRWLA receives annually and they do not receive any other form of income but donations.

²R10000 has been estimated as the increase in donations from the implementation of the system

Break-even Point = $1 + (117508.01 - 115016.02)/117508.01 = 1.02$ years

Net-Present Value:

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		¹ 120000	² 130000	130000	380000
PV of total benefits		108597	106467	96351	311415
Total Costs	2491.99	2491.99	2491.99	2491.99	9967.96
PV of total costs	2491.99	2255.19	2040.9	1846.97	8635.05

Net Present Value = $311415 - 8635.05 = R302779.95$

*Present Value was calculated using 10.5% annual interest rate in SA.

Candidate 2: Cost to Develop includes the R130 per month for hosting and the R103.99 for the domain name.

Pay Back Period is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		¹ 120000	² 130000	130000	380000
Total Costs	1667.71	1667.71	1667.71	1667.71	6670.84
Net Benefits	(1667.71)	118332.29	128332.29	128332.29	373329.16
Cumulative Net Cash Flow	(1667.71)	116664.58	244996.87	373329.16	

¹The R120000 is the budget that TRWLA receives annually and they do not receive any other form of income but donations.

²R10000 has been estimated as the increase in donations from the implementation of the system

Break-even Point = $1 + (118332.29 - 116664.58) / 118332.29 = 1.01$ years

Net-Present Value:

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		¹ 120000	² 130000	130000	380000
PV of total benefits		108597	106467	96351	311415
Total Costs	1667.71	1667.71	1667.71	1667.71	6670.84
PV of total costs	1667.71	1509.24	1365.83	1236.04	5778.82

Net Present Value = $311415 - 5778.82 = R305636.18$

*Present Value was calculated using 10.5% annual interest rate in SA.

Candidate 3: Cost to Develop includes the R325.76 once-off fee for the Google Playstore, R1290,02 per year for the Apple Store and lastly R325,76 per month for the Firebase DBMS.

Pay Back Period is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		¹ 120000	² 130000	130000	380000
Total Costs	5199.14	5199.14	5199.14	5199.14	20796.56
Net Benefits	(5199.14)	114800.86	124800.86	124800.86	359203.44
Cumulative Net Cash Flow	(5199.14)	109601.72	234402.58	359203.44	

¹The R120000 is the budget that TRWLA receives annually and they do not receive any other form of income but donations.

²R10000 has been estimated as the increase in donations from the implementation of the system

Break-even Point = $1 + (114800.86 - 109601.72)/114800.86 = 1.05$ years

Net-Present Value:

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		¹ 120000	² 130000	130000	380000
PV of total benefits		108597	106467	96351	311415
Total Costs	5199.14	5199.14	5199.14	5199.14	20796.56
PV of total costs	5199.14	4705.1	4258.01	3853.41	18015.66

Net Present Value = $311415 - 18015.66 = R293399.34$

*Present Value was calculated using 10.5% annual interest rate in SA.

Schedule Feasibility:

All three candidates will produce the same implementation time of 7 months as the INF team is limited to September 2017 which is 7 months in total.

7.4 Recommendations

The best candidate to choose would be candidate 1 as it benefits the organization financially. Since the organization is non-profit, it needs to save money as much as possible. Since candidate 1 is web-based, members can access the system at any time and at any location. This also saves them costs with regards to installing software on their computers and purchasing the licenses. This system will also be accessible on mobile platforms and the organization will be able to manage the system without external expertise. Compared to the other candidates offered, only candidate 1 can be developed by the INF team which also saves the organization costs with regards to professional expertise.

7.5 Conclusion

The feasibility analysis therefore identifies which candidate best suits the business need of the organization. It also identified the risks involved in making a decision as to which candidate is more feasible than the rest. By the decision to go forward with candidate 1, the organization will save money and time in the long run. This candidate is therefore the best option.

8. Appendix A: Client Documentation

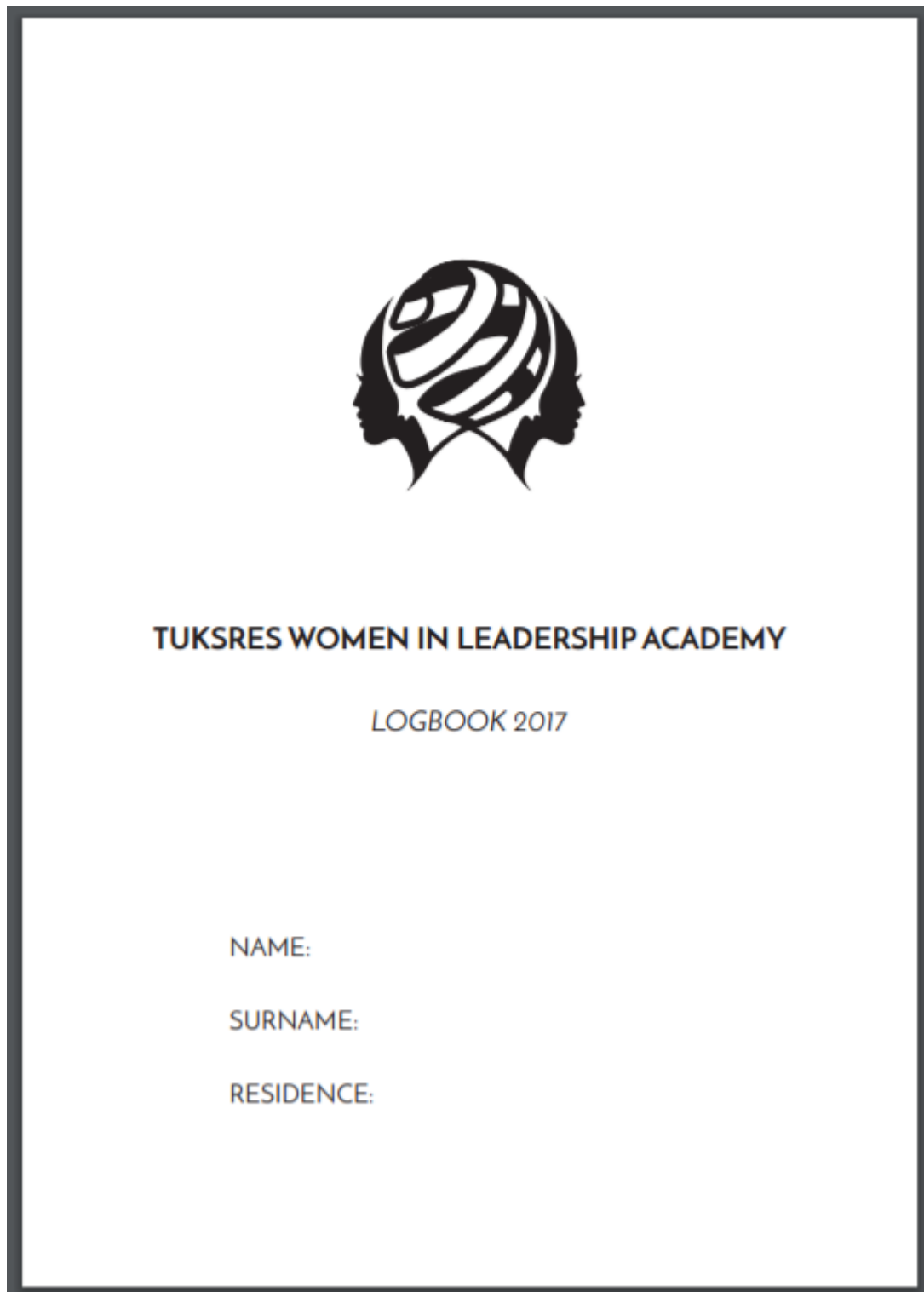


Figure 16 - Logbook (1)

CONTENT SESSIONS		
content session	facilitator signature	date
1		
2		
3		
4		
5		
6		




Figure 17 -Logbook (2)

COMMUNITY SERVICE			
	community service location	community service team signature	date
1			
2			
3			
4			
5			
6			




Figure 18- Logbook (3)

EVENTS			
event	event name	signature of event team member	date
1			
2			
3			
4			
5			
6			




Figure 19-Logbook (4)

NOTES:



Figure 20 - Logbook (5)



<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <p>UP TUSKRES WOMEN IN LEADERSHIP</p> <p>ACADEMY</p> <p>MANAGEMENT APPLICATION FORM</p> <p><u>Include a CV and 100-word Biography</u></p> </div> </div> <div style="margin-top: 20px;"> <p>Name & Surname:</p> <p>Email address:</p> <p>Cellphone Number:</p> <p>Degree:</p> <p>Position applying for:</p> </div> <ol style="list-style-type: none"> 1. Can you name a person who has had a tremendous impact on you as a leader? Maybe someone who has been a mentor to you? Why and how did this person impact your life? 2. What is one characteristic that you believe every leader and mentor should possess? 3. What is the biggest challenge female leaders are facing today? 4. What is the one behaviour or trait that you have seen derail more leaders' careers? 	<div style="text-align: center; margin-bottom: 10px;"> <p>PHOTO</p> </div> <ol style="list-style-type: none"> 5. What are you doing to ensure you continue to grow and develop as a leader? 6. What do you like to ask other leaders when you get the chance? 7. What interests you most about female leadership opportunities and why is it important to grow more female leaders? 8. Please give a 300 word motivation as to why you have chosen this specific job role and why you think you are capable and suited to it.
--	---

Figure 21 - Management Application



Please answer the following mid year assesment questions

Please rate on a scale from 1 (terrible) to 10 (fantastic) your agreement with the following statements

1. Your enjoyment of the academy so far.....
2. You feel prepared to teach content and fulfill your role.....
3. Expectations are clear.....
4. Communication is effective.....
5. I'm growing as a leader.....
6. I am making an impact.....
7. I am coping with the workload.....
8. I feel a part of the bigger picture and team of TRWLA.....
9. I feel confident about what is happening in the academy
10. I am being challenged and stimulated.....

Please answer the following questions:

1. How can we improve your experience of the academy and role as facilitator?
2. What criticism and suggestions do you have regarding the academy thus far?
3. Where do you see yourself in the academy in 18 months from now?
4. How has this experiemnce impacted on your life so far?

Figure 22 - Facilitator Midyear Report



Event outline and plan

- 1. Description**
(What does this event entail?)
- 2. Guest speaker**
(Include contact details of guest speaker and state whether a gift is required)
- 3. Who will be attending**
(Management/ Facilitators/ Academy girls/ School girls) (How many people are you expecting?)
- 4. Date of event**
- 5. Timeline of event**
(Important dates throughout the planning and organizing of the event)
- 6. Will a UP venue be required?**
(Yes/No) (Recommendation ex. Thuto 1-1, TuksRes Boardroom)
- 7. Who is responsible for the event as a whole**
(Name and contact details)
- 8. Specific task allocations**
(Who in the team will be responsible for what task?)
- 9. What will be needed from other departments/resources?**
(For ex. Shalitha to book venue/ Events to organize gift for guest speaker or catering)
- 10. Planned budget for project**
(Detailed breakdown of costs for the project/event)
- 11. Next step**
(Following steps to be taken and person responsible for each task)

Figure 23- Event Plan Document



Event/Project report

- 1. Description**
(What does this event entail?)
- 2. Guest speaker**
(Include contact details of guest speaker and state whether a gift is required)
- 3. Who will be attending**
(Management/ Facilitators/ Academy girls/ School girls) (How many people are you expecting?)
- 4. Date of event**
- 5. Timeline of event**
(Important dates throughout the planning and organizing of the event)
- 6. Will a UP venue be required?**
(Yes/No) (Recommendation ex. Thuto 1-1, TuksRes Boardroom)
- 7. Who is responsible for the event as a whole?**
(Name and contact details)
- 8. Specific task allocations**
(Who in the team will be responsible for what task?)
- 9. What will be needed from other departments/resources?**
(For ex. Shalitha to book venue/ Events to organize gift for guest speaker or catering)
- 10. Planned budget for project**
(Detailed breakdown of costs for the project/event)
- 11. Actual budget for project**
- 12. What went well and with what can we improve?**
- 13. Contact details of all parties involved**

Figure 24- Event Report Document



APPLICATION TO USE UNIVERSITY OF PRETORIA FACILITIES

PLEASE NOTE:

- The completed application form, together with an **operational plan and technical rider** (detailing all activities and requirements relating to the event) must be submitted at least **21 days** (external application) and **14 days** (internal application) prior to the proposed date of the planned event. For **theatre applications** should be submitted to the bookings office at least **6 weeks** prior to the event.
- Due to statutory requirements, Amphitheatre bookings should be made at least **6 months** prior to the event.
- The Facility/Theatre Manager will arrange a meeting with the applicant within 3 weeks of the event.
- Arrangements for the event can only proceed upon receipt of approval in writing.
- This application is accepted under the assumption that the applicant is the event organiser and the University of Pretoria the event owner.

Please indicate whether an internal or external entity is applying (mark with X):

☐ **Internal** University of Pretoria Department/Centre/Group
☐ **External** Public

External parties must please indicate what their relationship is with the University of Pretoria or any of its entities.

 Date of application:

DD	MM	YYYY
----	----	------

 Name of Department/Centre/Group: _____

 Cost centre¹ (internal) / VAT number
 (external): _____
Applicant details:
 Title, initials and surname: _____
 Staff / Student / ID number: _____
 Email address: _____
 Tel (mobile): _____ Tel (work): _____
 Postal address: _____ Code: _____

Date of event:		<table border="1"><tr><td>DD</td><td>MM</td><td>YYYY</td></tr></table>	DD	MM	YYYY
DD	MM	YYYY			
Time of event:	From:	<table border="1"><tr><td>To:</td><td></td><td></td></tr></table>	To:		
To:					
Move in and setup date:		<table border="1"><tr><td>DD</td><td>MM</td><td>YYYY</td></tr></table>	DD	MM	YYYY
DD	MM	YYYY			
Move in and setup time:	From:	<table border="1"><tr><td>To:</td><td></td><td></td></tr></table>	To:		
To:					
Rehearsal date:		<table border="1"><tr><td>DD</td><td>MM</td><td>YYYY</td></tr></table>	DD	MM	YYYY
DD	MM	YYYY			
Rehearsal time:	From:	<table border="1"><tr><td>To:</td><td></td><td></td></tr></table>	To:		
To:					

Facilities required (mark with X):**Hatfield**

- | | | |
|-------------------------|-------------------------------|--------------------------|
| • Conference centre | • Graduate Centre | <input type="checkbox"/> |
| Sanlam Auditorium (300) | • Law Building (1-30.1)(1-34) | <input type="checkbox"/> |

¹ 'E' cost centres to be used for purely academic purposes. 'A' cost centres to be used for events where an admission fee is charged and all other non-academic purposes. No fronting will be tolerated.

Figure 25- Facilities Application (1)


 UNIVERSITEIT VAN PRETORIA UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA																
SRC Boardroom (84) Conference room 100 (100) Function hall/kitchen Courtyard/small kitchen • Senate Hall (Admin Building)	<table border="0"> <tr><td><input type="checkbox"/></td><td>• IT Building 2-27 (200)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• (Mathematics Building)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• EMS Building (1-18)(1-25)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Blue Room (Old Chemistry Building)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>OTHER: _____</td><td></td></tr> </table>	<input type="checkbox"/>	• IT Building 2-27 (200)	<input type="checkbox"/>	<input type="checkbox"/>	• (Mathematics Building)	<input type="checkbox"/>	<input type="checkbox"/>	• EMS Building (1-18)(1-25)	<input type="checkbox"/>	<input type="checkbox"/>	• Blue Room (Old Chemistry Building)	<input type="checkbox"/>	<input type="checkbox"/>	OTHER: _____	
<input type="checkbox"/>	• IT Building 2-27 (200)	<input type="checkbox"/>														
<input type="checkbox"/>	• (Mathematics Building)	<input type="checkbox"/>														
<input type="checkbox"/>	• EMS Building (1-18)(1-25)	<input type="checkbox"/>														
<input type="checkbox"/>	• Blue Room (Old Chemistry Building)	<input type="checkbox"/>														
<input type="checkbox"/>	OTHER: _____															
Hatfield theaters • Aula Theatre • Musaion • Musaion glass foyer	<table border="0"> <tr><td><input type="checkbox"/></td><td>• Rautenbach Hall</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Amphitheatre (Risk categorisation)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Chapel</td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	• Rautenbach Hall	<input type="checkbox"/>	<input type="checkbox"/>	• Amphitheatre (Risk categorisation)	<input type="checkbox"/>	<input type="checkbox"/>	• Chapel	<input type="checkbox"/>						
<input type="checkbox"/>	• Rautenbach Hall	<input type="checkbox"/>														
<input type="checkbox"/>	• Amphitheatre (Risk categorisation)	<input type="checkbox"/>														
<input type="checkbox"/>	• Chapel	<input type="checkbox"/>														
Groenkloof • Groenkloof Auditorium (459) • Groenkloof Auditorium Annex • Groenkloof Auditorium Foyer • Music Building 2-44 • Normal Hall (850) OTHER: _____	<table border="0"> <tr><td><input type="checkbox"/></td><td>• Seminar Room 102</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Boma</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Groenkloof Research Commons (96)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Groenkloof Sport Centre</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Technika 1-2(30)</td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	• Seminar Room 102	<input type="checkbox"/>	<input type="checkbox"/>	• Boma	<input type="checkbox"/>	<input type="checkbox"/>	• Groenkloof Research Commons (96)	<input type="checkbox"/>	<input type="checkbox"/>	• Groenkloof Sport Centre	<input type="checkbox"/>	<input type="checkbox"/>	• Technika 1-2(30)	<input type="checkbox"/>
<input type="checkbox"/>	• Seminar Room 102	<input type="checkbox"/>														
<input type="checkbox"/>	• Boma	<input type="checkbox"/>														
<input type="checkbox"/>	• Groenkloof Research Commons (96)	<input type="checkbox"/>														
<input type="checkbox"/>	• Groenkloof Sport Centre	<input type="checkbox"/>														
<input type="checkbox"/>	• Technika 1-2(30)	<input type="checkbox"/>														
Sports Campus Venue applying for: _____																
Prinshof Campus Venue applying for: _____																
Onderstepoort Campus Venue applying for: _____																
Mamelodi Campus Venue applying for: _____ (If applying for the Arena please contact Security Services regarding a JOC application.)																
Will any additional facilities be required (mark with X):																
• Preparation for exhibition by sponsors • Audio visual equipment • Amount of tables	<table border="0"> <tr><td><input type="checkbox"/></td><td>• Telephone in lobby (Conference Centre)</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Podium</td><td><input type="checkbox"/></td></tr> <tr><td><input type="checkbox"/></td><td>• Amount of chairs</td><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>	• Telephone in lobby (Conference Centre)	<input type="checkbox"/>	<input type="checkbox"/>	• Podium	<input type="checkbox"/>	<input type="checkbox"/>	• Amount of chairs	<input type="checkbox"/>						
<input type="checkbox"/>	• Telephone in lobby (Conference Centre)	<input type="checkbox"/>														
<input type="checkbox"/>	• Podium	<input type="checkbox"/>														
<input type="checkbox"/>	• Amount of chairs	<input type="checkbox"/>														
Name of event: _____ Type of event: _____ (meeting, conference, performance, etc.) Purpose of event: _____																
Number of people expected:																
Performers: <input type="checkbox"/>	<table border="0"> <tr> <td>UP Staff:</td> <td><input type="checkbox"/></td> <td>Public</td> <td><input type="checkbox"/></td> <td>VIP</td> <td><input type="checkbox"/></td> </tr> <tr> <td>UP Students:</td> <td><input type="checkbox"/></td> <td>Guests:</td> <td><input type="checkbox"/></td> <td>Guests</td> <td><input type="checkbox"/></td> </tr> </table>	UP Staff:	<input type="checkbox"/>	Public	<input type="checkbox"/>	VIP	<input type="checkbox"/>	UP Students:	<input type="checkbox"/>	Guests:	<input type="checkbox"/>	Guests	<input type="checkbox"/>			
UP Staff:	<input type="checkbox"/>	Public	<input type="checkbox"/>	VIP	<input type="checkbox"/>											
UP Students:	<input type="checkbox"/>	Guests:	<input type="checkbox"/>	Guests	<input type="checkbox"/>											
Names of VIP's/dignitaries attending: _____ Will delegates pay attendance fee? _____ Will catering be required? _____																
<table border="0"> <tr> <td colspan="2">Please attach list of names.</td> <td></td> </tr> <tr> <td>YES</td> <td>NO</td> <td>If yes, how much? <input type="checkbox"/></td> </tr> <tr> <td>YES</td> <td>NO</td> <td>Please see Section 3 of Terms</td> </tr> </table>		Please attach list of names.			YES	NO	If yes, how much? <input type="checkbox"/>	YES	NO	Please see Section 3 of Terms						
Please attach list of names.																
YES	NO	If yes, how much? <input type="checkbox"/>														
YES	NO	Please see Section 3 of Terms														

Figure 26- Facilities Application (2)


 UNIVERSITEIT VAN PRETORIA UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA		<input type="text"/> and Conditions.									
If yes, who? Will any liquor be sold/served?		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 50px; text-align: center;">YES</td> <td style="width: 50px; text-align: center;">NO</td> </tr> </table> If yes, please see Section 3 of Terms and Conditions.		YES	NO						
YES	NO										
Do you require: Reserved parking Traffic control		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 50px; text-align: center;">YES</td> <td style="width: 50px; text-align: center;">NO</td> </tr> <tr> <td style="width: 50px; text-align: center;">YES</td> <td style="width: 50px; text-align: center;">NO</td> </tr> </table> From: <input type="text"/> To: <input type="text"/> From: <input type="text"/> To: <input type="text"/>		YES	NO	YES	NO				
YES	NO										
YES	NO										
If yes, please attach a list with the names and registration numbers of VIP's/ dignitaries and submit at least 3 days prior to the event. Contact Security Services (012) 420-2310 with for final arrangements.											
Temporary structure: JOC application: Attendance of VIP's/Dignitaries:		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 50px; text-align: center;">YES</td> <td style="width: 50px; text-align: center;">NO</td> </tr> <tr> <td style="width: 50px; text-align: center;">YES</td> <td style="width: 50px; text-align: center;">NO</td> </tr> <tr> <td style="width: 50px; text-align: center;">YES</td> <td style="width: 50px; text-align: center;">NO</td> </tr> </table> To finalise with Security Services. To finalise with Security Services. To finalise with Security Services and Department of University Relations. See protocol guidelines https://www1.up.ac.za/cs/groups/staff/documents/docume nt/mdaw/mdq2/-edisp/uppr086347.pdf		YES	NO	YES	NO	YES	NO		
YES	NO										
YES	NO										
YES	NO										
Undertaking by Applicant: I hereby accept and agree to the Terms and Conditions applicable to the use of University facilities. I accept full responsibility on behalf of the body stated above for the orderly progress of the function/gathering and for any damage to property that may occur.											
Name and surname: Applicant		Signature: Applicant									
Date		Date									
Event owner or sponsor risk rating:		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Risk category 1</td> <td style="width: 25%;">Risk category 2</td> <td style="width: 25%;">Risk category 3</td> <td style="width: 25%;">Risk category 4</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> </tr> </table>		Risk category 1	Risk category 2	Risk category 3	Risk category 4				
Risk category 1	Risk category 2	Risk category 3	Risk category 4								
See Terms and Conditions 17 for risk categorisation.											
To be completed in the case of an event arranged by an entity within the University: Endorsed by Head of Department/ Division Manager											
Name and surname: HOD/Manager		Signature: Date									
Supported by Dean/Director (Please indicate the appropriate designation.) I do hereby grant permission to host the above event as detailed.											
Name and surname: Dean/Director		Signature: Date									
FOR OFFICE USE											
Registered structure		YES NO Authorised:									
Applied for venue		YES NO Authorised:									

Figure 27- Facilities Application (3)

[illegible]

112


<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> UP TUKSRES WOMEN IN LEADERSHIP ACADEMY FACILITATOR APPLICATION FORM <u>Include a CV and 100-word Biography</u> </div> <div style="border: 1px solid black; padding: 5px; font-size: 0.8em;"> [Please insert a professional photograph here] </div> </div> <p>Name & Surname:</p> <p>Email address:</p> <p>Cellphone Number:</p> <p>Degree:</p> <ol style="list-style-type: none"> 1. Can you name a person who has had a tremendous impact on you as a leader? Maybe someone who has been a mentor to you? Why and how did this person impact your life? 2. What is one characteristic that you believe every leader and mentor should possess? 3. What is the biggest challenge female leaders are facing today? 4. What is the one behaviour or trait that you have seen derail more leaders' careers? 5. What are you doing to ensure you continue to grow and develop as a leader? 	<ol style="list-style-type: none"> 6. What do you like to ask other leaders when you get the chance? 7. What interests you most about female leadership opportunities and why is it important to grow more female leaders? <p><u>Short interviews (~20min) will take place at Duxbury on the following days (Please indicate your preferred date, time slots will be communicated closer to the date)</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">1. 20 November 2015 17:00 – 20:30</td> <td style="width: 40%; text-align: center;">Y/N</td> </tr> <tr> <td>2. 21 November 2015 08:30 – 13:00</td> <td style="text-align: center;">Y/N</td> </tr> </table> <p>If you are unable to make any of the interview dates please send an email to director.trwla@gmail.com in order to make an alternative arrangement.</p> <p><small>Questions regarding the programme and expectations for 2016 will be addressed during the interview, you can also enquire via email to director.trwla@gmail.com</small></p> <p><u>Notes for 2016:</u></p> <ol style="list-style-type: none"> 1. All Academy dates for 2016 will be communicated by 30 November 2015 2. A total of 6-7 content sessions will be facilitated in 2016 3. Formal training will take place in February 2016 4. Training programmes will be structured into 3-4 sessions and will involve training facilitators on the following: <ul style="list-style-type: none"> • Calendar and duties for 2016 • General information and training relating to the Academy • Facilitation and communication skills • Community service training • Mentorship training 	1. 20 November 2015 17:00 – 20:30	Y/N	2. 21 November 2015 08:30 – 13:00	Y/N
1. 20 November 2015 17:00 – 20:30	Y/N				
2. 21 November 2015 08:30 – 13:00	Y/N				

Figure 29 - Facilitator Application Form

Cailin Smith – Report 1: Katjeepering

I had my first content session with the girls of Katjeepering on the 2nd of March. Of the 60 girls that initially signed up, 29 were in attendance, although many gave excuses prior to the session, and were mainly absent due to semester tests. In the future, I would like to urge the girls more to tell me in advance if they will not be attending, so that I can organize with them to attend the content session at another res.

My biggest struggle during the session was to encourage the girls to participate. I often asked for opinions or examples from them and only once did someone put their hand up. I need to focus on making the girls feel more comfortable and less nervous with me and their peers so that they are more interactive. I will do this by coming prepared with more group activities and/or games. I also believe that the girls were quite tired and drained due to the fact that serrie has just started and they knew that they had practice directly after the session.

Apart from struggling to get the girls to interact, I feel that the session was a success and saw many nods of agreement, smiles and giggles during the session. At the end of the session many girls came to thank me for the session and looked driven to continue. I look forward to my next session, which I plan to have on the 23rd of March.

Figure 30 - Example of Content Session Report

9. Appendix B: Other Systems Investigated

9.1 Introduction

Taking the recommendation made for candidate 1 in the feasibility analysis and matching them up against our requirements, it is apparent that we are creating a bespoke system to manage our clients organisational functions.

Our proposed candidate is made up of requirements that resemble examples of many different systems. Hence, in our study we will explore different features from different systems that clearly illustrate the minimum functionality that needs to be provided in our system. We have categorized the examples of different systems by the requirements list we have finalized with our client.

9.2 Requirements: Manage Users, Employees and Students

System: Wordpress

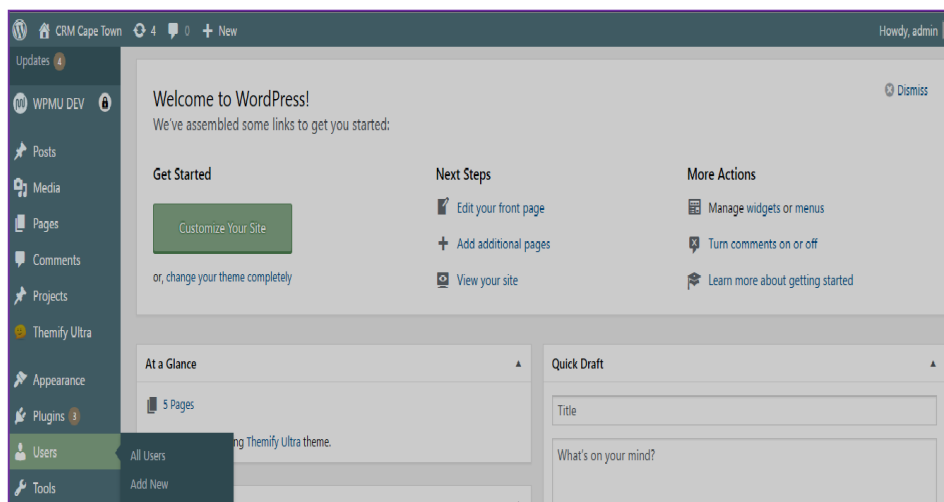


Figure 31 - (Wordpress, 2017)

Wordpress is web based content management system. Generally, a website has many people who are working on it, from the website admin, editor and many more. In the column on the left hand side, the administrator can manage the different level of users.

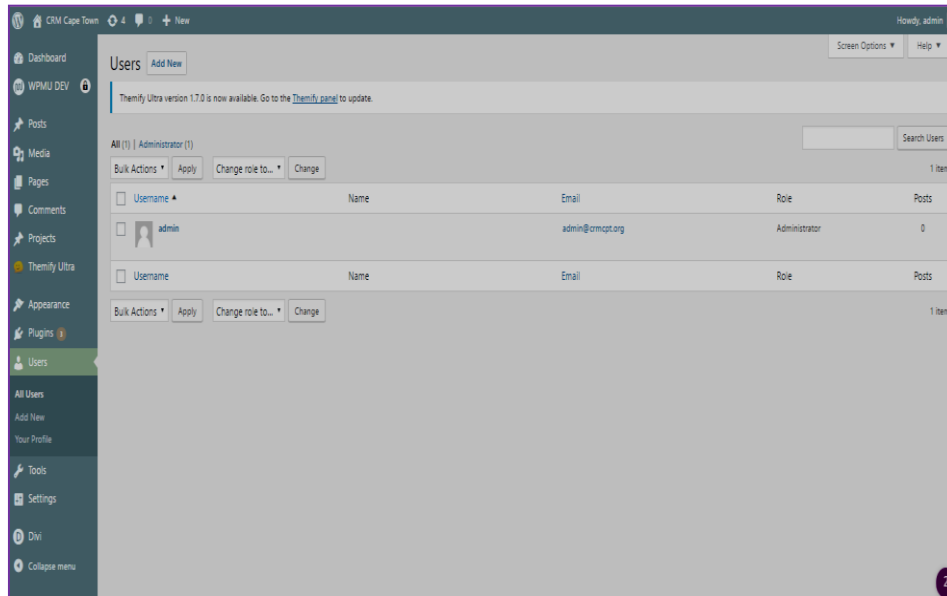
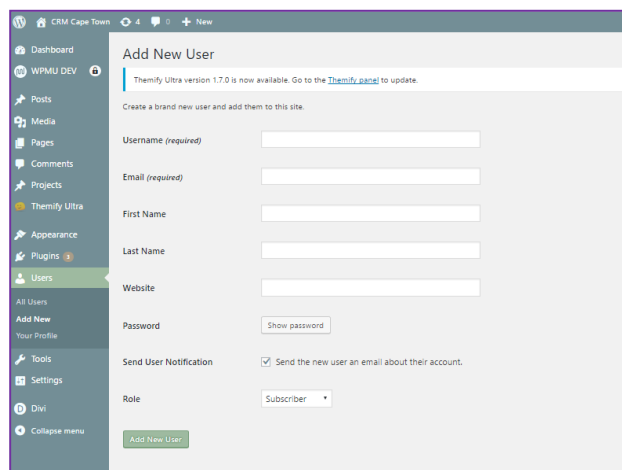


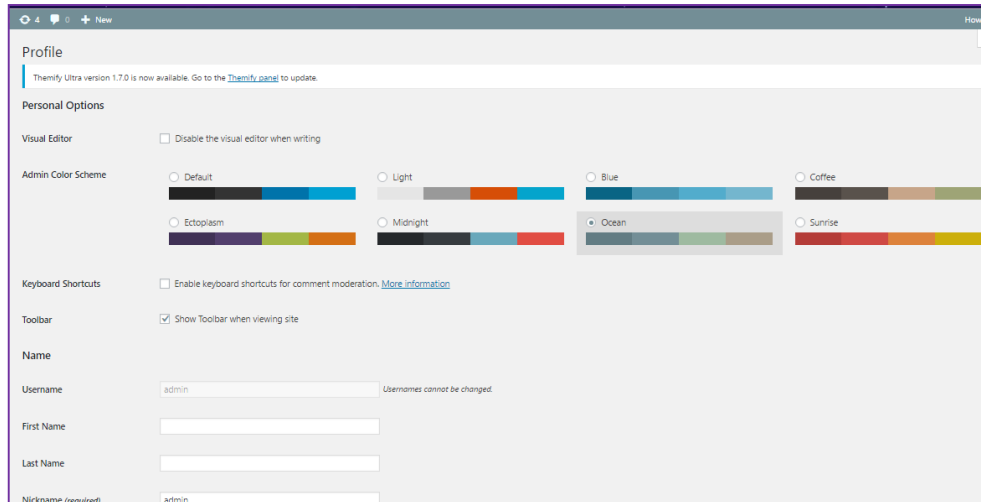
Figure 32 - (Wordpress, 2017)

The all users button is clicked, the admin is shown a list of where all users who allowed access into the Wordpress backend. The ability to produce all CRUD functionality is available too.



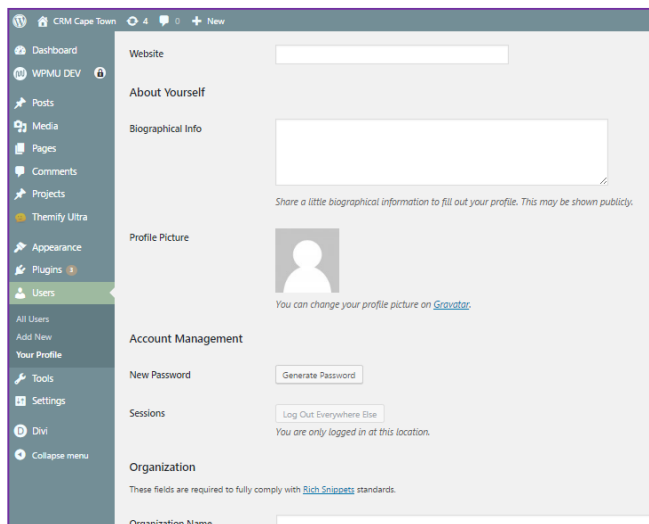
Here is an example that allows the admin to create a new user and specify which role in the organisation they are. This will then create constraints for certain users and allow them to do certain things within the system only.

Figure 33 (Wordpress, 2017)



Each registered user can update their profile details such as their name and colour of their dashboard.

Figure 34 (Wordpress, 2017)



Furthermore, users can also update social aspects of their profile such as a bio, website and profile picture. Updating security information is also easily available in the same area.

Figure 35 (Wordpress, 2017)

9.3 Requirements: Manage Events

System: Facebook

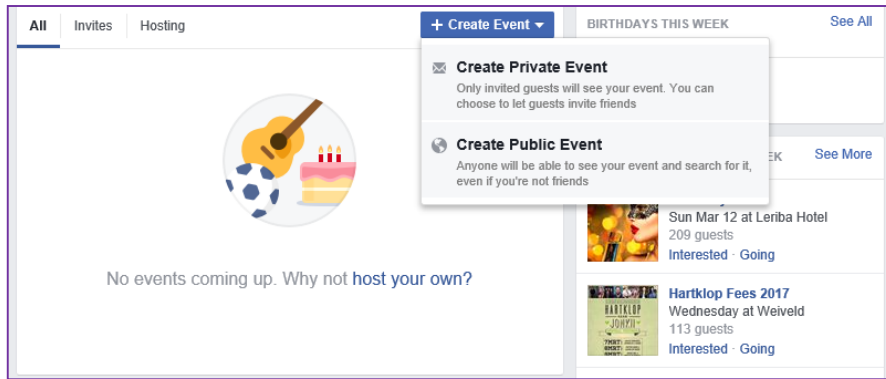
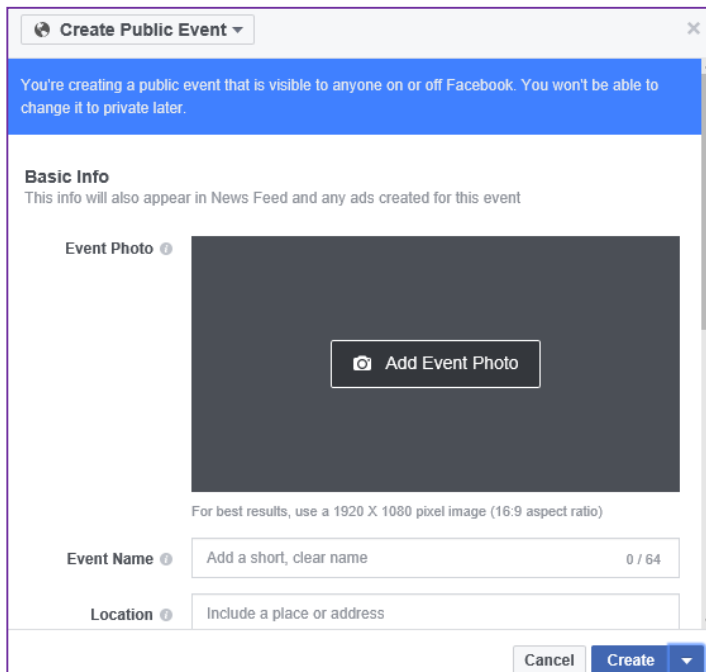


Figure 36 (Facebook, 2017)

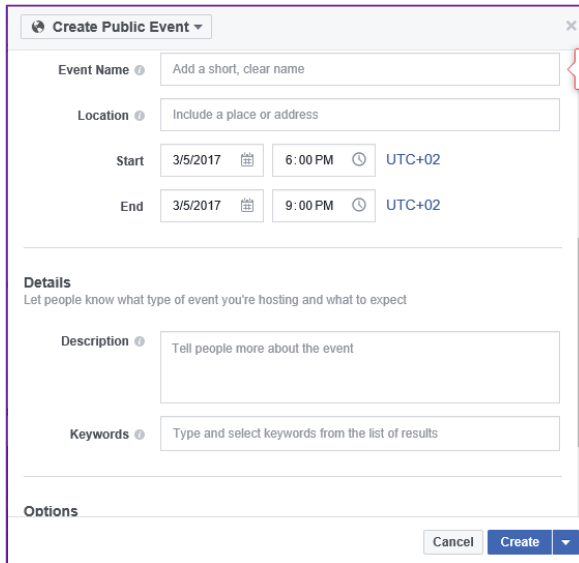
Facebook is used by billions of people all around the world, so their event feature is easily one of most used features to help organize their events. If a user wants to create an event, they can easily choose between two types. Which is the exact functionality that our client requested.



architecture

Figure 37 (Facebook, 2017)

Once an event is created, a photo, name and the location of the event are required in the form. Also, each field that requires information from the user, provides a guide as to what kind of information should be submitted. This is not only helpful for the user, but the builders of the system. Simply, because all data submitted will reflect the constraint our data



Create Public Event

Event Name ⓘ Add a short, clear name

Location ⓘ Include a place or address

Start 3/5/2017 6:00 PM UTC+02

End 3/5/2017 9:00 PM UTC+02

Details
Let people know what type of event you're hosting and what to expect

Description ⓘ Tell people more about the event

Keywords ⓘ Type and select keywords from the list of results

Options

Cancel Create

The user is then prompted to provide more intricate details about the event like the time and description. Special attention should be paid to the fact that users can select a start and end date and a link to a calendar for perspective.

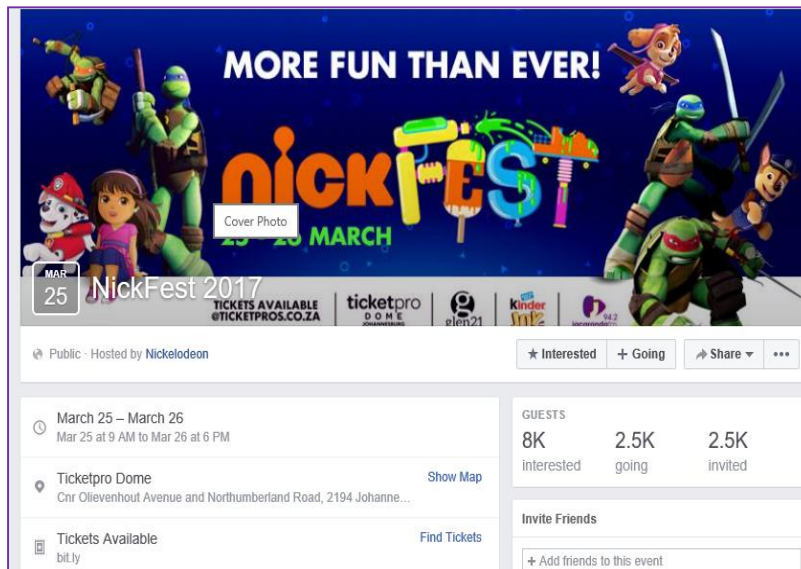
Figure 38 (Facebook, 2017)



Figure 39 (Facebook, 2017)

Once an event is created, users should be able to see the event's key details allow the

user to click on it look for more information.



The 'See More' label is selected. The dashboard for the event should be displayed with interesting statistics that make the user decided whether they would like to go or not.

Figure 40 (Facebook,2017)

9.4 Requirements: Manage Budget

System: Free Agent

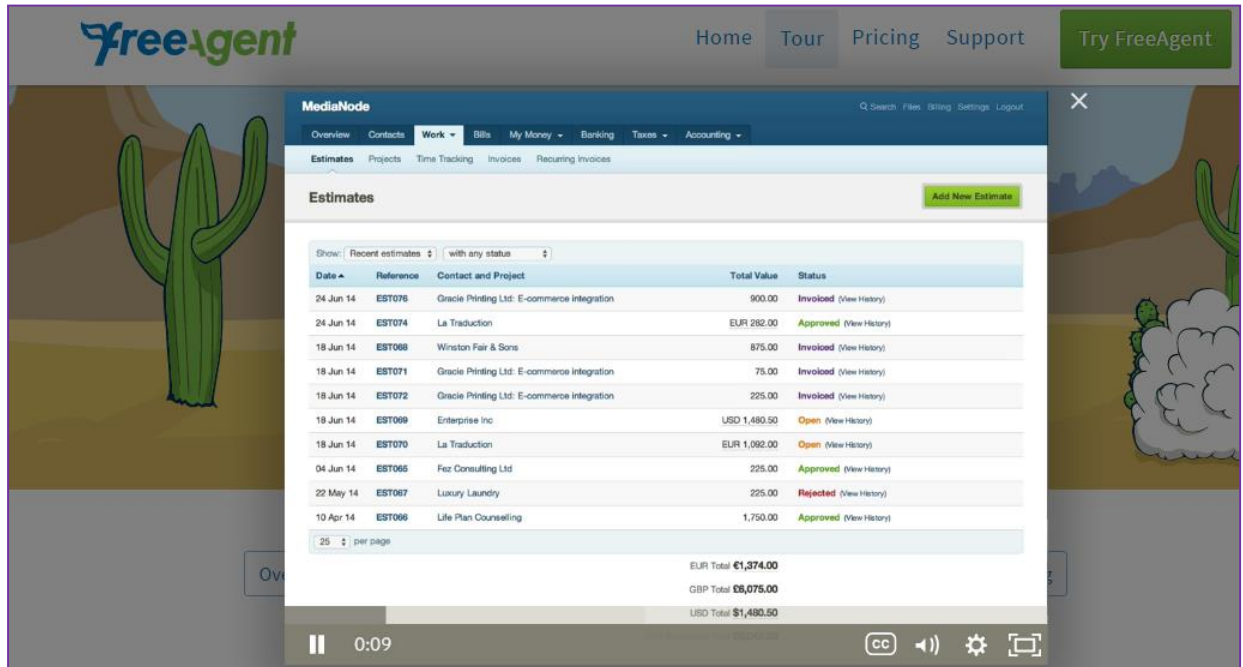
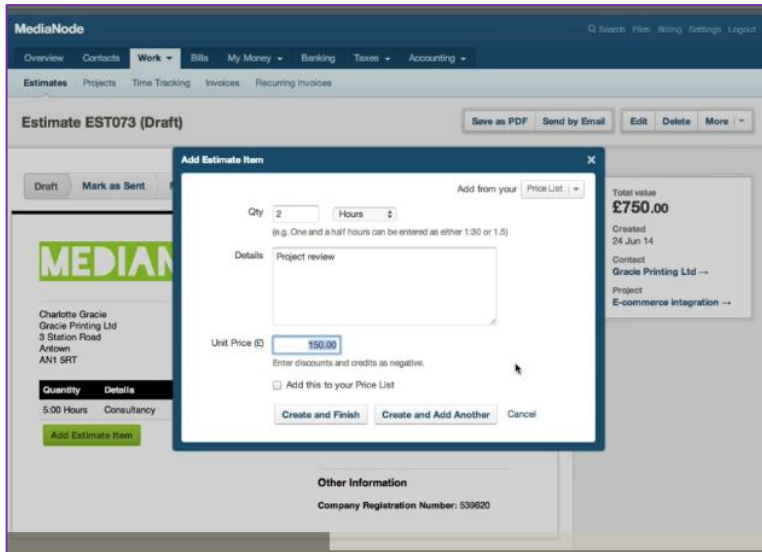


Figure 41 (Free Agent, 2017)

Free Agent is an accounting web app that allows you to easily manage your personal or business finances. More importantly, it provides the ability to create budget estimates. Users can view all their created estimates and view the status of each, whether it has been approved, rejected, or open. At the bottom of the estimate, it also provides totals in their different currencies.



The screenshot displays the MediaNode software interface. The main window shows the 'Estimate EST073 (Draft)' page. A modal dialog box titled 'Add Estimate Item' is open in the center. The dialog box contains the following fields and controls:

- Qty:** 2
- Hours:** 5
- Details:** Project review
- Unit Price (£):** £50.00
- Buttons:** Create and Finish, Create and Add Another, Cancel
- Checkbox:** Add this to your Price List (unchecked)

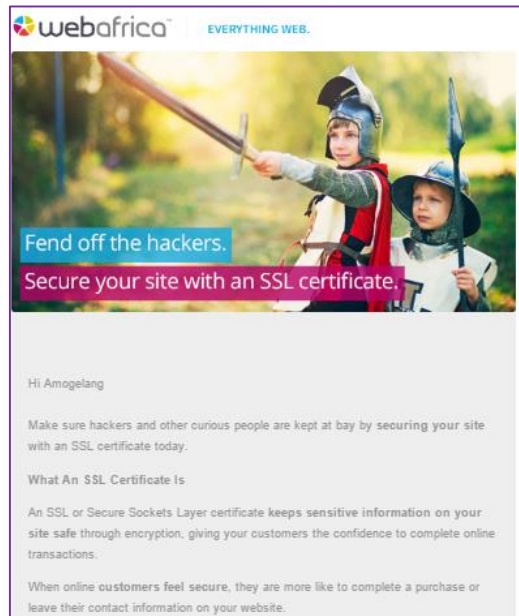
The background page shows the 'Estimate EST073 (Draft)' with a total value of £750.00. The page also includes a sidebar with company information and a top navigation bar with various menu items.

Users are handed more functionality throughout the creation of their estimate. Such as adjusting the details of the budget and unit prices. The ability to export to pdf and email is available. As well as basic CRUD functionality.

Figure 42 (Free Agent, 2017)

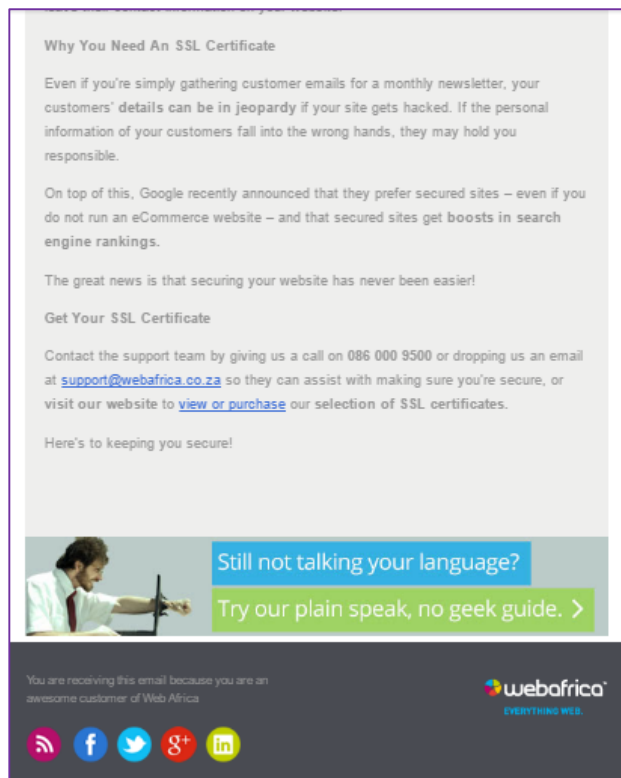
9.5 Requirements: Marketing

System: Web Africa's Email Product Marketing



Web Africa has a simple approach to their email marketing. Their email adverts are simple at describe what service they can provide.

Figure 43 (Web Africa, 2017)



The email contains the relevant links to purchase what they are advertising. As well as, links to the social media accounts.

Figure 44 (Web Africa,2017)

9.6 Requirements: Calendar

System: Google Calendar

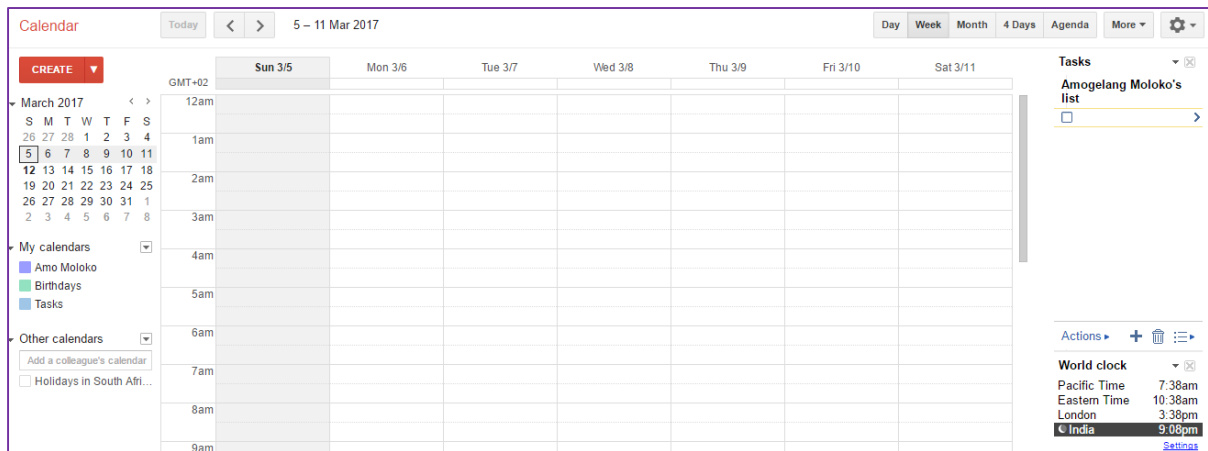


Figure 45(Google Calendar,2017)

Google Calendar as the name suggests is calendar app. Within the app, users can see the months of the year in different options, day, week and month. Events created on the left hand side will be visible on the various days that they are scheduled. With the ability to exploit any CRUD functionality.

9.7 Requirements: Generate Reports

System: Google Analytics

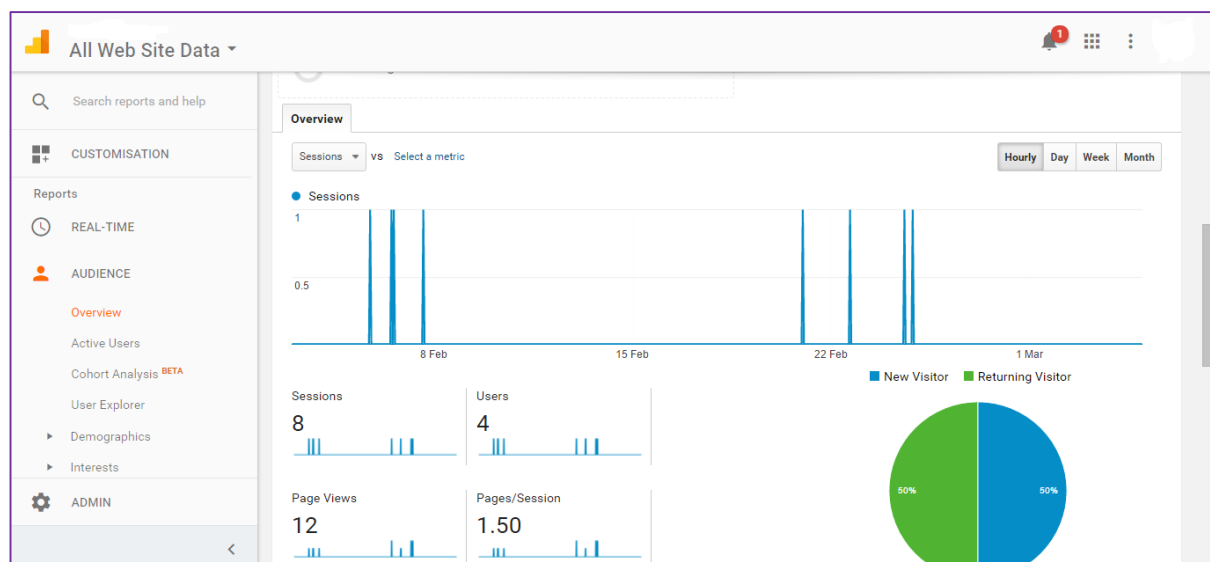


Figure 46 (Google Analytics,2017)

Google Analytics provides a dashboard for users to see reports on user activity on any website. The granularity of the data can be changed by the hour, day, week or month. Within the report, users are provided with more sub reports and can change the metric they wish to track. A key take away is that the data is presented in the form of a dashboard. Viewing similar analytics tools, this is the best way to provide data in a user-friendly way.

9.8 Requirements: Manage Communication

System: Asana

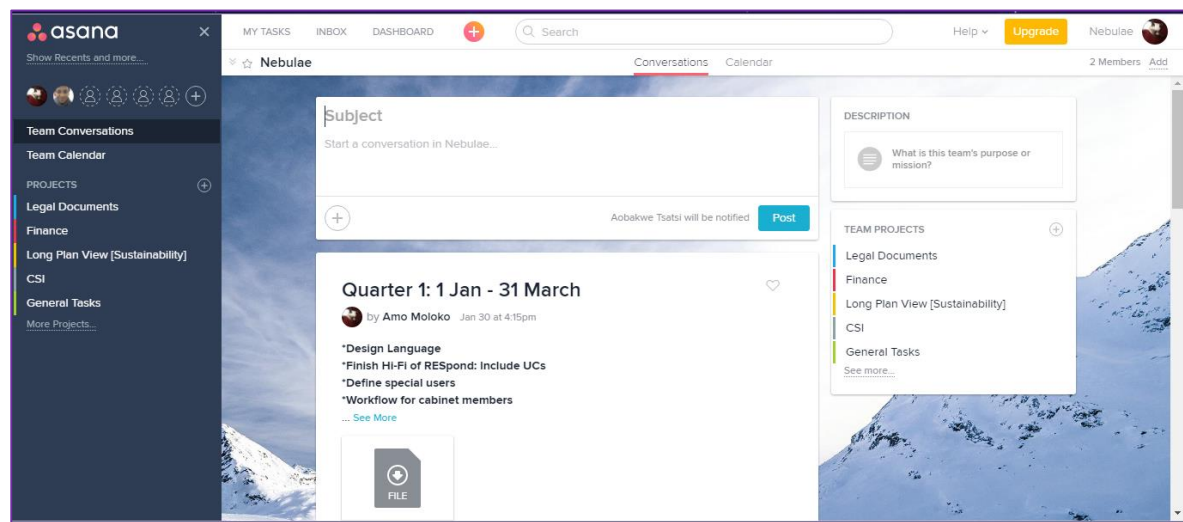
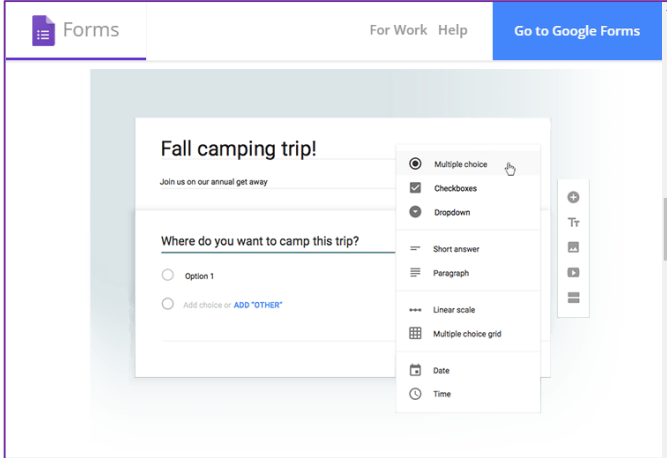


Figure 47 (Asana,2017)

Asana is team collaboration tool that aids organizations to manage the schedule of their projects. Asana allows communication to take place through the publishing of posts. After the user has outlined the subject of the post and contents, they can add attachments and also isolate the post to specific users. This enables companies to communicate easily.

9.9 Requirements: Manage Feedback

System: Google Forms

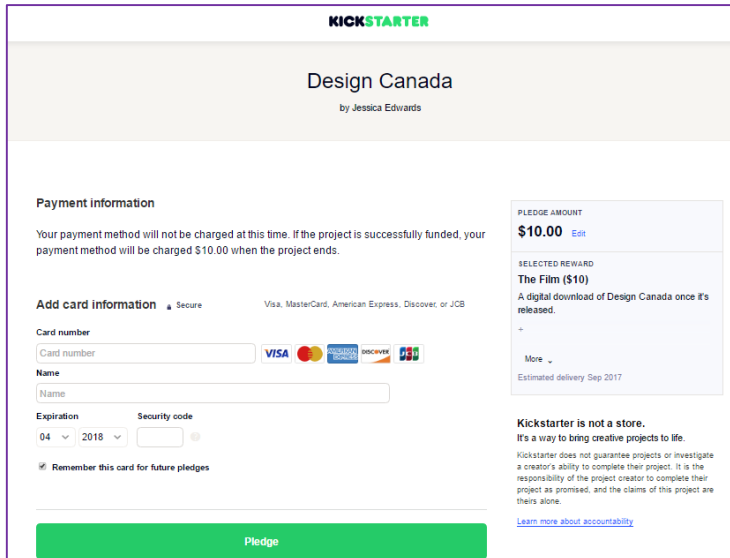


Google Forms is an excellent tool for creating feedback forms. Users can customize components the way they need in order create forms that will get the necessary feedback.

Figure 48 (Google Forms, 2017)

9.10 Requirements: Donations

System: Kickstarter



KICKSTARTER

Design Canada
by Jessica Edwards

Payment information
Your payment method will not be charged at this time. If the project is successfully funded, your payment method will be charged \$10.00 when the project ends.

Add card information Secure Visa, MasterCard, American Express, Discover or JCB

Card number
Name
Expiration
Security code

☒ Remember this card for future pledges

PLEDGE AMOUNT
\$10.00 [Edit](#)

SELECTED REWARD
The Film (\$10)
A digital download of Design Canada once it's released.

[More](#)
Estimated delivery Sep 2017

Kickstarter is not a store.
It's a way to bring creative projects to life.
Kickstarter does not guarantee projects or investigate a creator's ability to complete their project. It is the responsibility of the project creator to complete their project as promised, and the claims of this project are theirs alone.
[Learn more about accountability](#)

Pledge

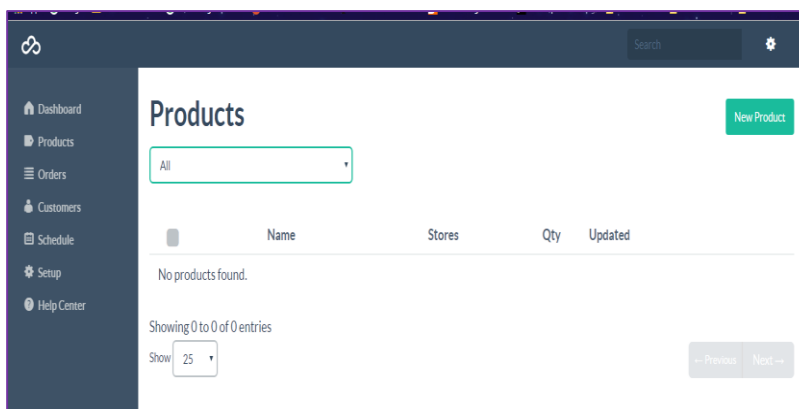
Kickstarter allows people to create projects that need crowdsourced funding. Once the user has selected a project to support, they are presented with a screen requesting their payment information for the donation. This donation page is compatible with various financial institutions. The users

particular such as name and card number will change depending on the standard that the bank uses.

Figure 49 (Kickstarter,2017)

9.11 Requirements: Manage Stock

System: Shopseen



Products [New Product](#)

All

Name	Stores	Qty	Updated
No products found.			

Showing 0 to 0 of 0 entries

Show 25

[Previous](#) [Next](#)

Shopseen allows users to create new products that they would like to sell and track in their inventory. The user can also explore CRUD functionality.

Figure 50 (Shopseen, 2017)

9.12 Conclusion

The various examples of the different functionalities from many system helps provide a picture of what will be required to be fulfilled in the final version of the system. For example, Asana's communication tool illustrates how user friendly any form of in app communication be created.

Google Analytics illustrates how complicated requirements can have met to fulfil the user's need to gain insight in event specific activity. The visual representation of the report is also depicted in graphs that are easily understandable and adhere to good user interaction principles.

On the point of user interaction, all of the various systems that were researched are all extremely user friendly. Buttons and labels are presented in ways that are consistent with other systems they users utilize every day. Also, these good user interaction practices allow the systems to fulfil their requirements and reach their respective organizational goals.

9. 12 GAP Analysis Report

Introduction

The GAP analysis Report has enabled us to look at what the difference between TWRLA's actual business performance up against its future state. Gaps identified between the two states of performance were also analysed against their advantages and disadvantages.

Current System

TRWLA is a fairly new establishment, so it is still using a paper based model to meet their organizational goals. This creates numerous redundancies and inefficiencies in many of their stakeholders' workflow. There is a WordPress blog located under the University of Pretoria's website. However, this just consists of blogs created by their member's. No business requirements are essentially being met by using the paper based work flow.

Ideal Future System

The ideal future system is that is available online or an app, that allows TRWLA to manage registrations of new students, facilitators and other management staff. This web app would need to enable TRWLA to also set up their events, manage budgets, stock and different suppliers.

Students who attempt to achieve the necessary requirements will be able learn and enrich themselves through a medium that is up similar to Clickup and other content platforms. Facilitators will also be able upload content and provide help to any students that are struggling or in need of reinforcement.

The new system will aggregate various parts of their operational functions and seek to provide a platform for collaboration and reporting.

GAP requirements analysis between current and ideal system

User management	Content Delivery
Event Management	Analysis on progress
Financial Management	

Three candidates as identified in feasibility analysis

	Candidate 1: Web App	
	Advantages	Disadvantages
User management	Users of all kinds in the organization can be managed from any device.	Administrative privileges might be a steep learning curve.
Analysis on progress	Reports can be easily displayed and downloaded in popular file formats.	User event tracking code may be cumbersome.
Content Delivery	The delivery of content to TRWLA's stakeholders can be delivered through push notifications.	Service provider's might be susceptible to network faults.
Event Management	There are many available web frameworks which will enable us to create unique modifications to event management.	None.
Financial Management	Financial planning can be done in one platform.	None.

	Candidate 2: Install a CMS	
	Advantages	Disadvantages
User management	System is easily accessible to all stakeholders.	Can't easily customize administrative privileges
Analysis on progress	None.	Requires bespoke code to be developed for tracking user events.
Content Delivery	Drag and drop builders are available to provide e-learning opportunities.	None
Event Management	Integrates with existing Microsoft Office to Products.	None.
Financial Management	Financial planning can be done in one platform.	Security risk to financial data might be high due to limited working knowledge of security protocol.

	Candidate 3: Create iOS and Android Apps	
	Advantages	Disadvantages
User management	Ability to reach users on modern platforms	Only Accessible to those with smartphones only.
Analysis on progress	Events in database provide extraction points for data.	Data is in the backend tier of the application. This means extra coding needing to display data to front end of system.
Content Delivery	Dynamic opportunities to present content.	Size of content might compromise the size of our database.
Event Management	None	Programming Language a barrier to implementing requirements,
Financial Management	None	Programming Language a barrier to implementing requirements,

Conclusion

Candidate 1 still presents the option against the analysis of the GAP criteria. This is because candidate 2 poses security risks and instances where most of the unique requirements that need to be met will require bespoke code in some instances, on a platform that is very unfamiliar to most on our team. However, the GAP between current system and candidate 2 is met through the use of drag and drop builders and integration with existing Microsoft Office 365 products.

Candidate 3 closes the GAP requirements through the ability to deliver TRWLA's requirements through mobile platforms. However, technically it will not be the most feasible solution to implement. As well as, providing limitations to users who would prefer to use the system on the desktop devices.

In sum, candidate 1 against the GAP requirements of the current system is best suited to the needs of TRWLA and would more easily implemented on our side technically. Most importantly, the system would be easily accessible to all users on any device.

10. Appendix C: Complexity

Topic	Level		Marks	M
1. Special GUI	Appropriate MDS and SDI form design of the system	*	3	Yes
	Appropriate use of grids		3	Yes
	Appropriate use of tabs		3	Yes
	Use of graphs in an appropriate business context		3	Yes
	The storage and display of graphical information, like photos with a good business reason		3	Yes

Topic	Level		Marks	M
	Working e-mail automatically generated from the database in an appropriate business context		3	Yes
	SMS messages automatically generated from the system in an appropriate business context		3	Yes
	Extensive user-friendly search facility		3	Yes
	At least one use of a tree to display data		3	Yes
	At least one use of a calendar view of data		3	Yes
	Uploading a file into the system with appropriate business reason		3	Yes
	The use of multimedia in an appropriate business context		3	Yes
	At least one use of a timer in an appropriate business context		3	Yes
2. Database access	At least 30 tables used (4 member groups) or 40 tables used (5 member groups)	*	6	Yes
	Full referential integrity on all tables	*	6	Yes
	At least one use of master-detail table relationships	*	3	Yes

Topic	Level		Marks	M
3. Reports	At least 5 simple list reports in a reporting tool (no control breaks, no graphs, single table)	*	6	Yes
	At least 1 transactional report with 2 or more control breaks (with heading and total lines, multiple tables)		3	No
	At least 1 management report using a graph		3	Yes
4. Flexibility	All data that can change in future should not be hard coded but maintained in a sub-module of the system (e.g. Lookup tables)		6	Yes
	Some business rules are not hard coded, but maintained in a sub-module of the system.		6	Yes
5. Error handling	All system-generated errors are trapped and consistent, user-friendly error messages are displayed		6	Yes
	Appropriate data validation on all input fields		6	Yes
6. Help	At least one menu item or other control that opens up a complete help document (HTML, PDF, Help-file)		3	Yes
	Extensive context-sensitive help. E.g. calling Help on a specific screen/function will automatically open		6	No

Topic	Level		Marks	M
	the specific help for that screen/function.			
	Search Facility on Help		3	Yes
	Extensive use of hints		3	Yes
7. Security	Logon screen with user ID and password and fixed user profiles		3	Yes
	Encrypted passwords in database		3	Yes
	Flexible user profiles (i.e. you can dynamically add user profiles that will enable/disable access to certain parts of the system)		6	Yes
8. Audit Trail	An audit trail of all transactions in the system showing at least date, time, user, transaction type, critical data (such as amount and quantity of transaction)		6	Yes
	Able to search the audit trail on any of the following: date, user, transaction type		3	Yes
9. Installation	Fully functional installation disks that take care of application installation requirements (install and uninstall)		6	No
	Fully functional installation disks that take care of database installation requirements (including database settings)		6	No

Topic	Level		Marks	M
10. Backup and Restore	A backup and restore subsystem exists that backup/restore all data (system may exit during restore)		6	Yes
11. Import/Export Data	OLE: Opens Word or Excel and automatically places data in it based on the selected data in the calling screen (with good business reason)		6	Yes
	Text File: At least 1 text file for Importing or Exporting of data (with good business reason)		3	Yes
	XML: At least 1 XML file for Importing or Exporting of data (with good business reason)		3	Yes
12. External INPUT device	Simple Link to an external INPUT device using Windows plug-and-play technology. (This could include a swipe card reader, bar code reader, etc.)		3	No
	Loose Link to an external INPUT device using device specific software. Data or images must seamlessly be stored in the database but device specific software is visible to the user. (This could include a digital camera, scanner, voice recording device, thumb print reader, etc.)		6	No
	Tight Link to an external INPUT device using device specific software. Data or images must seamlessly be stored in the		9	No

Topic	Level		Marks	M
	database but device specific software is not visible to the user. (This could include a digital camera, scanner, voice recording device, thumb print reader, etc.)			
13. External APPLICATION / Services	Integrate an existing web service into your application (with good business reason)		3	Yes
	A fully functional link to an installed external application system exists and the interface must be shown to work on the external system. Note that this excludes Microsoft Office Applications		6	No
14. Web processing	At least one appropriate business use of static Web-pages (e.g. Help files or an advertisement for your client)		3	Yes
	Substantial Web-server processing – Display data from a database on the browser		3	Yes
	Substantial Web-server processing – add data from a browser into the system		6	Yes
	Substantial Web-server processing – uploading a file from a local PC to the web-server (integrated into the system)		6	Yes

Topic	Level		Marks	M
	Substantial mobile device processing integrated into the system (e.g. Smartphone, Tablet)		9	Yes
15. Programming Principals	The system consists of three distinct tiers: data; business; and presentation. Each of the levels consists of a separate application object.		6	Yes
	Basic interfacing to the Windows system registry for appropriate application data and settings		3	No
	Comprehensive use of stored procedures and/or triggers		3	Yes

Maximum Complexity Marks **222**

Selected Complexity Marks 174

Unselected Complexity Marks 48

11. Conclusion

The project proposal document has covered all details of the initial business problem, possible solutions and the analysis of the potential solutions. The suggested solution was then discussed and analysed in detail in order to give the client a good idea of what to expect from the system, by means of figures, graphics and explanations. The document began with the client information, followed by the project request, project charter, problem analysis, requirement analysis and decision analysis. This was then reinforced by means of client

documentation and figures of other systems investigated. Ultimately, the project proposal encourages the client to go ahead with the TRWLA system.

11. Sign-Off by Client

I _____ hereby agree to the contents of the above document.

Signed on this the _____ of March 2017 at _____.

Bes Liebenberg

12. References

Agent, F., 2017. *Free Agent*. [Online]

Available at: www.freeagent.com

[Accessed 5 March 2017].

Analytics, G., 2017. *Google Analytics*. [Online]

Available at: analytics.google.com

[Accessed 5 March 2017].

Asana, 2017. *Asana*. [Online]

Available at: app.asana.com

[Accessed 5 March 2017].

Calendar, G., 2017. *Google Calendar*. [Online]

Available at: calendar.google.com

[Accessed 5 March 2017].

Facebook, 2017. *Facebook*. [Online]

Available at: www.facebook.com

[Accessed 5 March 2017].

Kickstarter, 2017. *Kickstarter*. [Online]

Available at: www.kickstarter.com

[Accessed 5 March 2017].

Shopseen, 2017. *Shopseen*. [Online]

Available at: <https://www.shopseen.com/products>

[Accessed 5 March 2017].

Wordpress, 2017. *Wordpress*. [Online]

Available at: wordpress.org

[Accessed 5 March 2017].

Attrition for logo: Designed by Starline / Freepik