Hockey Club Website and Management Solution
Business Case v1.0

BUSINESS CASE

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EXECUTIVE SUMMARY

Problems

The following are the core problems that the solution needs to address:

- The paper-based registration process is cumbersome for club members, who have to fill out the same form each year and return it to the committee, and the committee, which has to collect the forms and capture the details on them.
- There is no central repository of member information, which makes it difficult for the committee to keep members' details up to date and to perform duties that require up-to-date member contact information.
- The current Website is costly to maintain, often out of date and visually unappealing.
- Committee members use their private e-mail addresses, which causes issues when they leave the committee.

Project Objectives

Based on the problems listed above, the project objectives are as follows:

- Create an improved registration process, providing an easy-to-use form for members to use and making it easier for the committee to capture the members' details.
- Provide a facility to centrally maintain and access member information.
- Reduce the time and cost of updating the Website's content.
- Improve the look of the Website.
- Provide the committee with club-specific (portfolio) e-mail addresses.
- Grow the club by increasing membership by four members per year for five years.

Solution

The proposed solution will be composed of the parts lists below, all of which sit on a single Web server (except for the mail list system).

- Content management system (CMS)
  - Club members, prospective new members, supporters and the public access content (fixtures, photos, events, etc.) via publically-accessible Web pages (the front-end). Team captains also use the front-end to submit match reports.
  - The committee uses private Web pages (the back-end) to manage and upload content.
- Administration system
  - Prospective new members register and returning (existing) club members re-register using the front-end. As they do so, they are subscribed to the club's mailing lists.
  - The committee uses the back-end to extract membership lists, including a registration list for the hockey union.
- Database
  - Both the CMS and the administration system use the database to store information.

- E-mail system
  - The e-mail system is used to provide the committee with portfolio e-mail addresses.
- Mailing list system
  - This is separate to the above-mentioned parts of the solution.
  - The committee send e-mails (e.g., newsletters and event invitations) to the club using it.

Benefits

The following tangible benefits have been identified:

- Cost savings
  - Save on paper for and printing of forms, as well as the effort of capturing them.
  - Reduced Website maintenance cost because the committee can manage the site.
- Additional revenue
  - Improved communication will lead to better event attendance, which will lead to increased bar revenue.
  - Numerous things (such as the improved look of the Website) will lead to an improved image of the club, which will attract more members and subscription revenue.
  - Improving the site and optimising it for search engines will increase traffic to it, making it attractive to advertisers.

The following are intangible benefits:

- Several features of the project will contribute to enhancing the club's image:
  - The new look of the Website.
  - Regularly updated Website content.
  - The registration form, which is innovative (no other club in the Western Cape has an online form) and improves the club experience for members.
  - Branded portfolio e-mail addresses add to the professionalism of the club.
- The online form will save both the members and the committee time and effort.
- The central database will aid the committee in its duties by ensuring it has easy access to up-to-date member details.

Costs

The project is comprised of two sets of costs:

- Project cost: estimated effort of 121 hours and cost of R36 300. This is higher than the budgeted R25 000 (by 45%).
- Operating costs: R135 per month, which is lower than the budgeted R250.

Feasibility

The following are the key feasibility issues for the project:

- Financial: it is estimated that the project will pay for itself in 3 years. Over five years it has a positive net present value (NPV) of R35 854 and a return on investment (ROI) of 77.3%.
- Business: it is aligned with the club's goals and drivers, and will enhance the club's image.
- Technical: the club is not locked into vendors and can change both its development partner and Website host at any time.
- Operational: the committee will be trained on how to use the solution, as well as provided with a guide for future committee members. The solution will cut down the committee's workload and its operating cost is lower than what has been budgeted for.
- Time: the project started on 2 April and the plan is for it to be established by 19 April. It is planned that the solution will be implemented by 30 May (followed by a period of support to ensure it is functioning to the club's satisfaction) and for the project to be completed with a post-implementation review on 8 June. This means that it will be completed well before the deadline of 30 September.

Recommendation

The project is clearly of benefit to the club, financially and otherwise. However, it exceeds the budgeted cost, though it will pay for itself in three years. It will be completed well before the deadline of 30 September, meaning that there is enough time to deal with any unforeseen issues or schedule changes.

It is recommended that the club proceed with the project if additional finance can be found for it.

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1. BACKGROUND

The client is a large hockey club that has more than 250 members. The club is a non-profit organisation and is run by a committee of nine people, all of whom are volunteers and members of the club.

A key aim for the committee this year is to improve numerous aspects of the club, particularly on the administrative side. Amongst other things, they want to enhance the club's image, improve their communication to members, and decrease their administrative workload.

1.1. Business Drivers

The club's business drivers are to:

- Enhance the club's image (present a more professional view of the club).
- Improve the service delivered to members.
- Improve the committee's communication, particularly with members.
- Reduce the committee's administrative workload.
- Reduce costs where possible.

1.2. Business Problems

The following problems have been identified:

- The paper-based registration process is cumbersome for members.
    - A registration form has to be obtained and completed by each member, and then returned to a committee member.
    - Returning members also have to fill out the same form each year and for many their details do not change.
- The paper-based registration process creates a significant amount of work for the committee.
    - The committee has to drive members to complete and return the forms. Committee members have to spend time physically collecting the forms. Forms can also get lost.
    - The details on the forms have to be manually captured by a committee member and submitted to the hockey union (a mandatory procedure). This task is time-consuming and prone to errors.
- There is no central base of up-to-date member information.
    - Member information is gathered in a spread-sheet at the beginning of the season by the secretary and distributed to the rest of the committee. However, updated versions are often not distributed or are not used, leading to ineffective communication – old members and non-existent addresses are mailed, members who joined late are not included in mails, etc.
    - There are privacy concerns when blind carbon copying is not used and members' addresses are exposed to everyone who receives the mail, as well as anyone to whom the mail is forwarded. In

addition, members can reply to everyone on this list, sometimes leading to large numbers of e-mails being sent to everyone.

- The current Website is costly to maintain and often out of date.
    - ❖ Content is sent to a developer to upload and the developer charges for their time. The updates are often not immediate and can even take weeks.
- The visual design of the current Website is unexciting and lacklustre, which may lead to a poor image of the club.
- Committee members e-mail from their private addresses, which can cause issues when they leave the committee, as they are often still contacted regarding the portfolio they held.
    - ❖ In addition, there is no branding on the e-mails the committee sends.

2. GOALS AND OBJECTIVES

The project's goals and objectives are aligned with the business drivers to ensure that the project supports the organisation's strategy.

2.1. Goals

- Improve the member registration process.
- Simplify the administration of the membership information.
- Improve the look of the Website and simplify the management of its content.
- Enable the committee to communicate more effectively.
- Grow the club's membership.

2.2. Objectives

- Create an improved registration process involving a form that is easy for members to access and submit, and that requires returning members to only update their previously-provided information (rather than re-enter it).
- Create an improved registration process that allows the committee to capture membership information and produce a union registration list with less effort than the current process.
- Provide a facility to centrally maintain and access members' information.
- Reduce the cost of updating the Website's content.
- Reduce the time taken to update the Website.
- Improve the look of the Website.
- Provide the committee with club-specific e-mail addresses with club branding.
- Increase the club's membership by four members each year for the next five years.

3. SCOPE

This section will define the project in terms of the stakeholders involved, the business areas under consideration, and the scope of the solution.

3.1. Terms of Reference

The following terms have been set by the committee:

- The project budget is R25 000 (capital expense), with a maximum on-going cost of R250 per month (operating expense).
- The project deadline is 30 September 2012 (the end of the club's current season and financial year).

3.2. Stakeholders

The stakeholders of the project and their interests in it are summarised in Table 1 below.

Stakeholder	Interest	Reference
INTERNAL STAKEHOLDERS		
Committee	▪ Report on project progress ▪ Being able to mail all members	FRQ 4.2.
Club captain	▪ Communication with the club, including access to members' contact details	FRQ 2.1., 2.2.
Treasurer	▪ Communication with the club, including access to members' contact details ▪ Members' subscription fee information	FRQ 2.3. IRQ 1.1., 2.1.
Secretary	▪ Member registration list for the hockey union ▪ Access to members' contact details	IRQ 1.1., 1.2.
Social convenor	▪ Communication with the club, including access to members' contact details	FRQ 2.4., 2.5.
Team captain	▪ Reporting match results to the club	FRQ 2.6.
Club member	▪ Re-registering for a new season ▪ Information about fixtures, events and fees	FRQ 3.1. – 3.4.
EXTERNAL STAKEHOLDERS		
Prospective new club members	▪ Joining the club (registration) ▪ Information about the club – events, photos, fixtures, etc.	FRQ 1.1., 3.1. – 3.4.

Stakeholder	Interest	Reference
Supporters and public	▪ Information about the club – events, photos, fixtures, etc.	FRQ 3.1. – 3.4.
Hockey union	▪ Club membership information	IRQ 1.2.
Sponsors	▪ Exposure on the Website	

Table 1: Stakeholder requirements matrix

3.3. Business Area Scope

The functional decomposition of the club presented in Figure 1 on the next page shows the various activities and processes in it. The majority of these are out of the scope of this project; however, the following fall within the scope of the project:

- The handling of member registration, including new applications, the maintenance of member details and the submission of a membership list to the hockey union.
- The sending of subscription fee reminders to members.
- The communication of player selections to the club.
- The communication of fixtures to the club.
- The advising of players of upcoming provincial tournaments and trials (so that the players may enter them).
- The maintenance of the social calendar.
- The promotion of club events to the members.
- The reporting of match results to the club by the team captains.

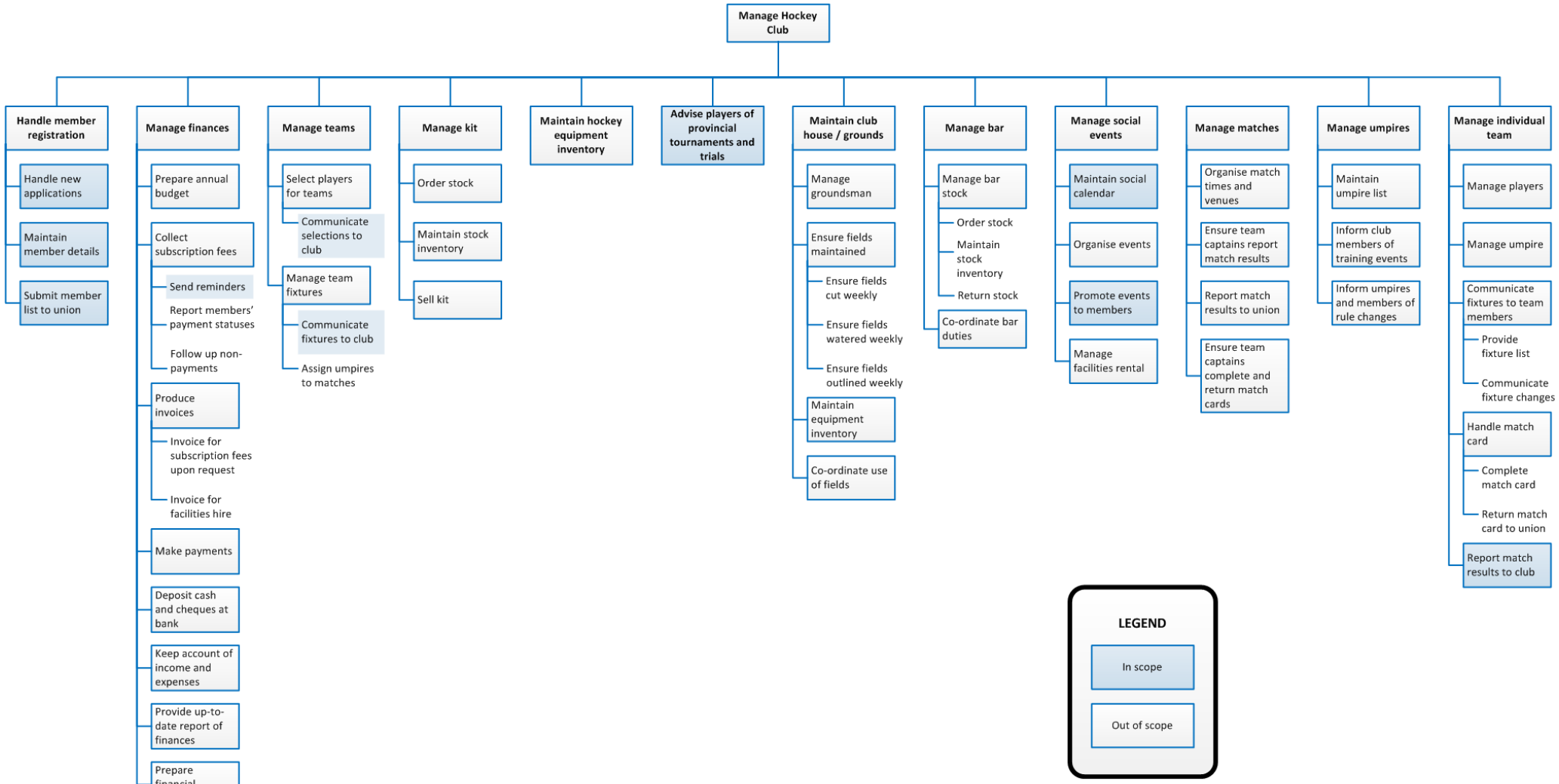

Figure 1: Functional decomposition

3.4. Project Scope

The project will follow the software development lifecycle, the phases of which are depicted in Figure 2 below.

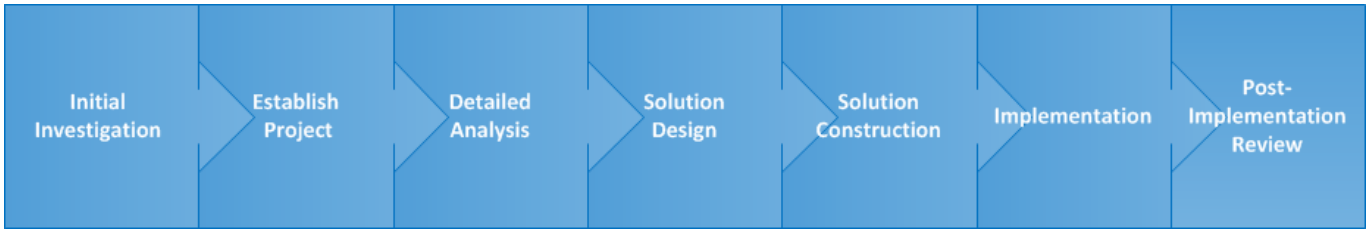

Figure 2: Project approach – the software development lifecycle

These phases include, but are not limited to, the following actions and outputs:

- Initial investigation
  - Consultation with the committee to identify project goals and objectives, as well as high-level requirements.
  - Presentation and delivery of the business case (this document), together with recommendations.
  - Business case sign-off by the committee.
- Establish project
  - Creation and sign-off of the project definition document.
  - Signing of project contracts with vendors.
- Detailed analysis
  - A workshop with stakeholders to determine requirements.
  - Delivery of the functional specification document to the committee and, upon committee approval, to the solution development vendor.
- Solution design
  - Construction of a technical specification by the solution development vendor, in consultation with the business analyst.
- Solution construction
  - Development of the solution.
  - Testing of the solution. This is managed by the business analyst according to an established testing plan and will involve stakeholders.
  - User training, managed by the business analyst.
- Implementation
  - Publishing of the Website.
  - Website launch (go-live), with support from the developer and analyst.
- Post-implementation review
  - Review of the project, including a discussion of possible future work on the solution.

The preliminary project schedule is shown below in Figure 3. According to this schedule, the project will be completed by 8 June 2012 – well within the specified deadline.

ID	Task Name	Dependent On	Start	Finish	Duration
	Initial investigation		2012/04/02	2012/04/18	**11.0**
1	Initial project meeting		2012/04/02	2012/04/02	1.0
2	High-level project plan and effort estimates	1	2012/04/03	2012/04/03	1.0
3	Workshop 1	2	2012/04/04	2012/04/04	1.0
4	Business Case writing	3	2012/04/05	2012/04/10	2.0
5	Client review of Business Case	4	2012/04/11	2012/04/13	3.0
6	Business Case revision	5	2012/04/16	2012/04/16	1.0
7	Client sign off of Business Case	6	2012/04/17	2012/04/18	2.0
	Establish project		**2012/04/19**	**2012/04/24**	**6.0**
8	Project Definition Document writing	7	2012/04/19	2012/04/20	2.0
9	Sign-off of Project Definition Document	8	2012/04/23	2012/04/24	2.0
10	Contract signed	8	2012/04/23	2012/04/24	2.0
	Detailed analysis		**2012/04/25**	**2012/05/11**	**10.0**
11	Workshop 2	10	2012/04/25	2012/04/26	2.0
12	Functional Specification	11	2012/05/02	2012/05/03	2.0
13	Client review of Functional Spec.	12	2012/05/04	2012/05/08	3.0
14	Functional Spec. revision	13	2012/05/09	2012/05/09	1.0
15	Client sign off of Functional Spec.	14	2012/05/10	2012/05/11	2.0
	Solution Design		**2012/05/14**	**2012/05/15**	**3.0**
16	Database design and implementation	15	2012/05/14	2012/05/14	0.5
17	Project set-up	15	2012/05/14	2012/05/14	0.5
18	Website and interface design	15	2012/05/14	2012/05/15	2.0
	Solution construction		**2012/05/16**	**2012/05/30**	**15.0**
19	CMS configuration and customisation	16, 17, 18	2012/05/16	2012/05/21	4.0
20	Administration system development	16, 17, 18	2012/05/16	2012/05/22	5.0
21	Testing	19, 20	2012/05/23	2012/05/23	1.0
22	User acceptance testing	21	2012/05/24	2012/05/25	2.0
23	Training	22	2012/05/28	2012/05/29	2.0
24	Training documentation writing	23	2012/05/30	2012/05/30	1.0
	Implementation		**2012/05/30**	**2012/06/05**	**6.0**
25	Deployment	23	2012/05/30	2012/05/30	1.0
26	Go-live support	23, 24	2012/05/30	2012/06/05	5.0
	Post-implementation review		**2012/06/08**	**2012/06/08**	**1.0**
27	Project review	25, 26	2012/06/08	2012/06/08	1.0

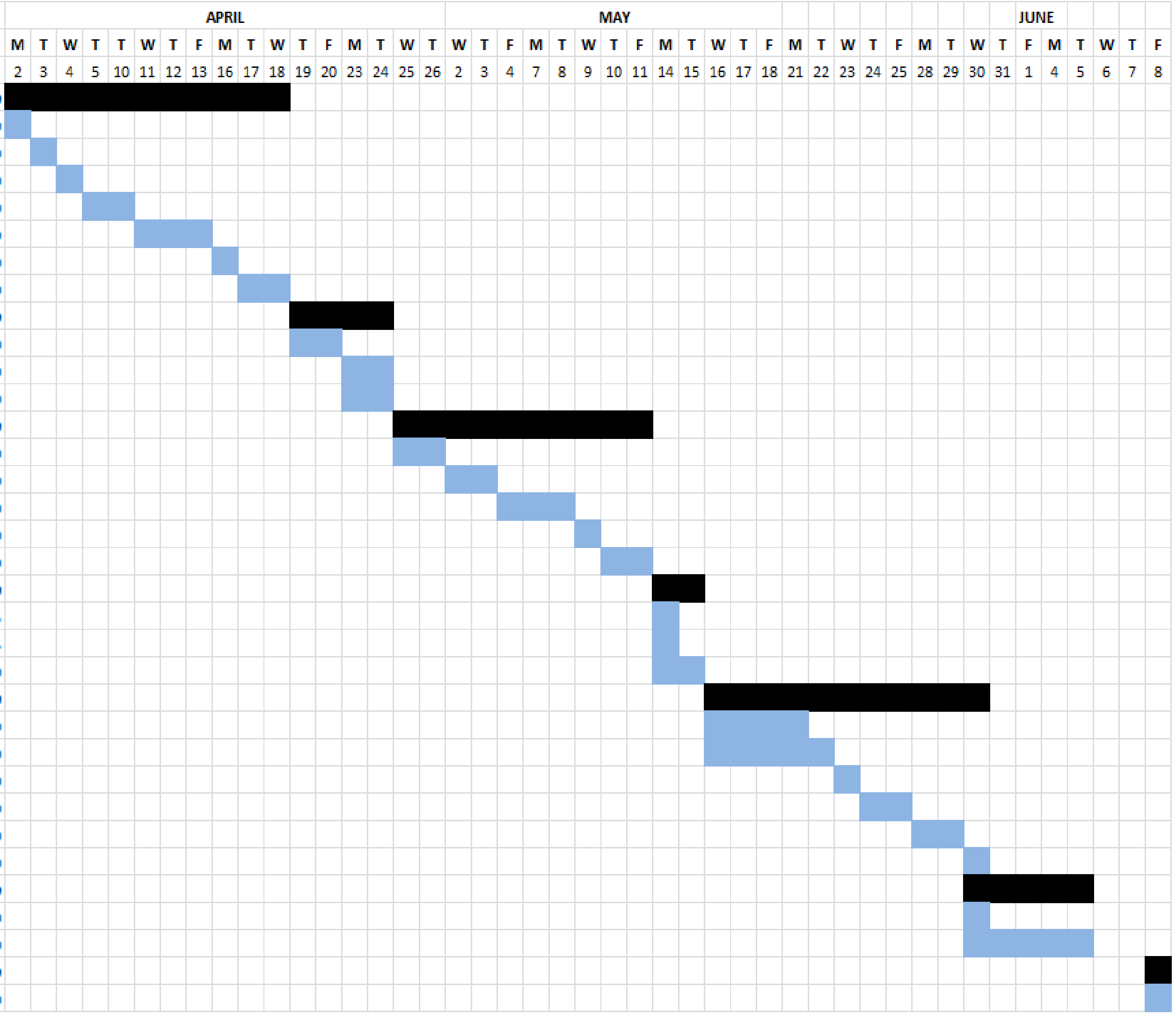

Figure 3: Project schedule

3.5. Solution Scope

The context diagram shown below (Figure 4) depicts which stakeholders will directly interact with the solution and how they will do so.

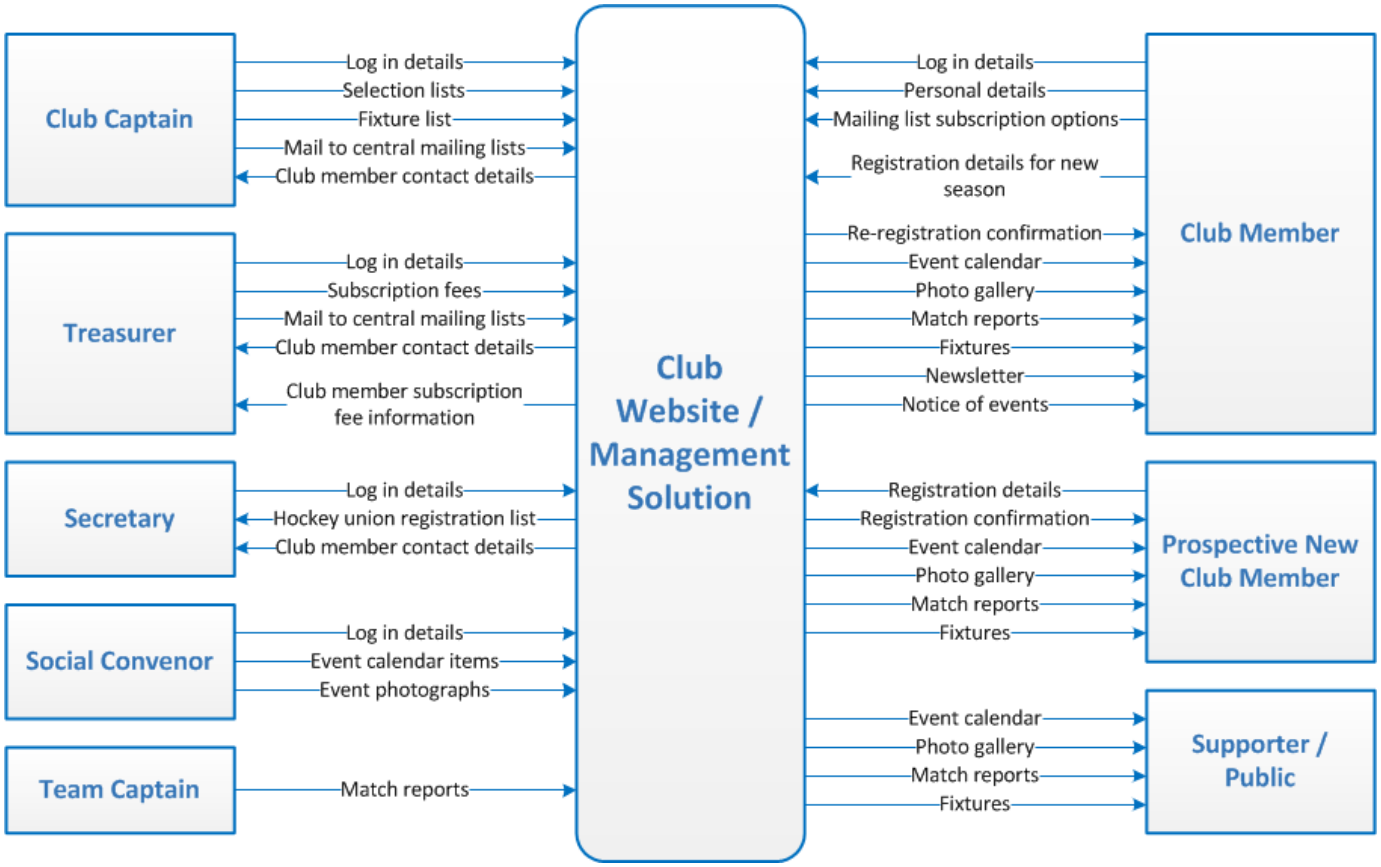

Figure 4: Context diagram

3.6. Project Deliverables

The following will be delivered as part of the project:

- The Business Case (this document), which needs to be reviewed and signed off by the committee.
- The Project Definition Document, which will define the project comprehensively and will need to be reviewed and signed off by the committee.
- A Functional Specification, which will define project requirements and solution more comprehensively than the Business Case. This document will also need to be reviewed and signed off by the committee.
- The source code of the solution.
- A comprehensive disaster recovery plan.
- A training document detailing how to use the solution.

3.7. Product Quality Assurance

In order to ensure that high quality products are produced, quality assurance will happen throughout lifecycle of the project. Stakeholders play a key part in this and they will be required to assess and sign-off the above-mentioned deliverables, as well as be involved with testing the solution before it is implemented. The key quality assurance tasks are:

- The client review and sign-off of the Business Case.
- The client review and sign-off of the Project Definition Document.
- The client review and sign-off of the Functional Specification.
- Internal reviews of all of the above documents.
- Development using established technologies.
- Development according to established industry and in-house standards.
- Testing of the solution by the developers, including code testing, performance testing, security testing and code reviews.
- Testing of the solution by the analyst. This will include rigorous testing of the interface in different Internet browsers, of the underlying business rules, and of informational outputs (reports and lists).
- User acceptance testing involving the solution end-users (the stakeholders).
- A review to assess the project and plan for any future work.

4. PRELIMINARY REQUIREMENTS DEFINITION

In this section the requirements of the project are defined at a high level. The Functional Specification document, which is produced in the next phase of the project analysis, will cover these in a finer level of detail.

4.1. Functional Requirements

The following functional requirements have been identified:

No.	Requirement
FRQ 1.	**Register members**
FRQ 1.1.	*Register new member* A new member must be able to register to join the club.
FRQ 1.2.	*Re-register returning member* A member who has already registered and wishes to play during the new season must be able to re-register – i.e., update or confirm their details and sign up for the new season.
FRQ 2.	**Manage content**
FRQ 2.1.	*Upload selection lists* The club captains must be able to post the selection lists, which are Excel files.
FRQ 2.2.	*Upload fixture list* The club captains must be able to post the fixture list, which is an Excel file obtained from the hockey union.
FRQ 2.3.	*Post subscription fees* The treasurer must be able to post the season's subscription fees.
FRQ 2.4.	*Post event calendar items* The social convenor must be able to post items to an event calendar.
FRQ 2.5.	*Post photographs* The social convenor must be able to post photographs to a photo gallery.
FRQ 2.6.	*Post match reports* The team captains must be able to post match reports.
FRQ 3.	**View content**
FRQ 3.1.	*View event calendar* Everyone must be able to view the event calendar.

No.	Requirement
FRQ 3.2.	*View photographs* Everyone must be able to view the photographs.
FRQ 3.3.	*View match reports* Everyone must be able to view the match reports.
FRQ 3.4.	*View fixtures* Everyone must be able to view the club's fixtures.
FRQ 4.	**Mailing lists**
FRQ 4.1.	*Subscribe member to mailing list* Members must be automatically subscribed to the mailing list when they register or re-register.
FRQ 4.2.	*Send e-mails to mailing list* The committee must be able to send e-mails to the mailing list.

Table 2: Functional requirements

4.2. Informational Requirements

The following informational requirements have been identified:

No.	Requirement
IRQ 1.	**Membership lists**
IRQ 1.1.	*Club member contact details* The solution must be able to generate an Excel file of all members and their contact details. This list is required by all committee members, but particularly the club captains, treasurer and secretary.
IRQ 1.2.	*Hockey union registration list* The solution must be able to generate an Excel file of all members and their contact details in the format required by the hockey union. This list is required by the secretary.
IRQ 2.	**Other lists**
IRQ 2.1.	*Club member subscription fee information* The solution must be able to generate an Excel file of all members and their subscription fee details (i.e., what type of member they are and what their subscription fee is). This list is required by the treasurer.

No.	Requirement
IRQ 3.	**Other informational requirements**
IRQ 3.1.	*Web traffic report* The committee must be able to see a report detailing the Website's traffic.

Table 3: Informational requirements

4.3. Non-functional Requirements

The following non-functional requirements have been identified:

No.	Requirement
NRQ 1.	*Security* There must be adequate security to prevent unauthorised access to the management sections of the site and administration system. The prevention of unauthorised access to the members' information is particularly important.
NRQ 2.	*Technologies to be used* The solution must be created using technologies that are easy to access so that future development can be handled by a different developer if required. The original source code is a deliverable.
NRQ 3.	*Backup* There must be an automatic procedure to back up the database once a day.
NRQ 4.	*Disaster recovery* A disaster recovery plan must be delivered with the solution.
NRQ 5.	*Content management* The solution must allow the committee to change the content of the Website without requiring technical knowledge and skills (e.g., knowledge of HTML).
NRQ 6.	*Cross-browser support* The solution must function in all major web browsers.
NRQ 7.	*Speed* The solution must function sufficiently quickly so as to not hamper use (the time it takes for a Web page to load is particularly important).
NRQ 8.	*Search engine optimisation* The solution must be optimised so as to ensure it supports search engines and helps the site achieve a good ranking.

No.	Requirement
NRQ 9.	*User interface* The user interface must be designed so that it guides the user and easy for a broad variety of people to use (young and old, technology proficient and not, etc.). This is especially important for the registration process.
NRQ 10.	*Space for future content* The solution must provide a reasonable amount of disk space for the addition of new (future) content.
NRQ 11.	*Report/list Excel format* All Excel lists/reports must be in Excel 2007 format.

Table 4: Non-functional requirements

5. OUTLINE OF SOLUTION

The conceptual solution is shown in Figure 5 and described in further detail below it.

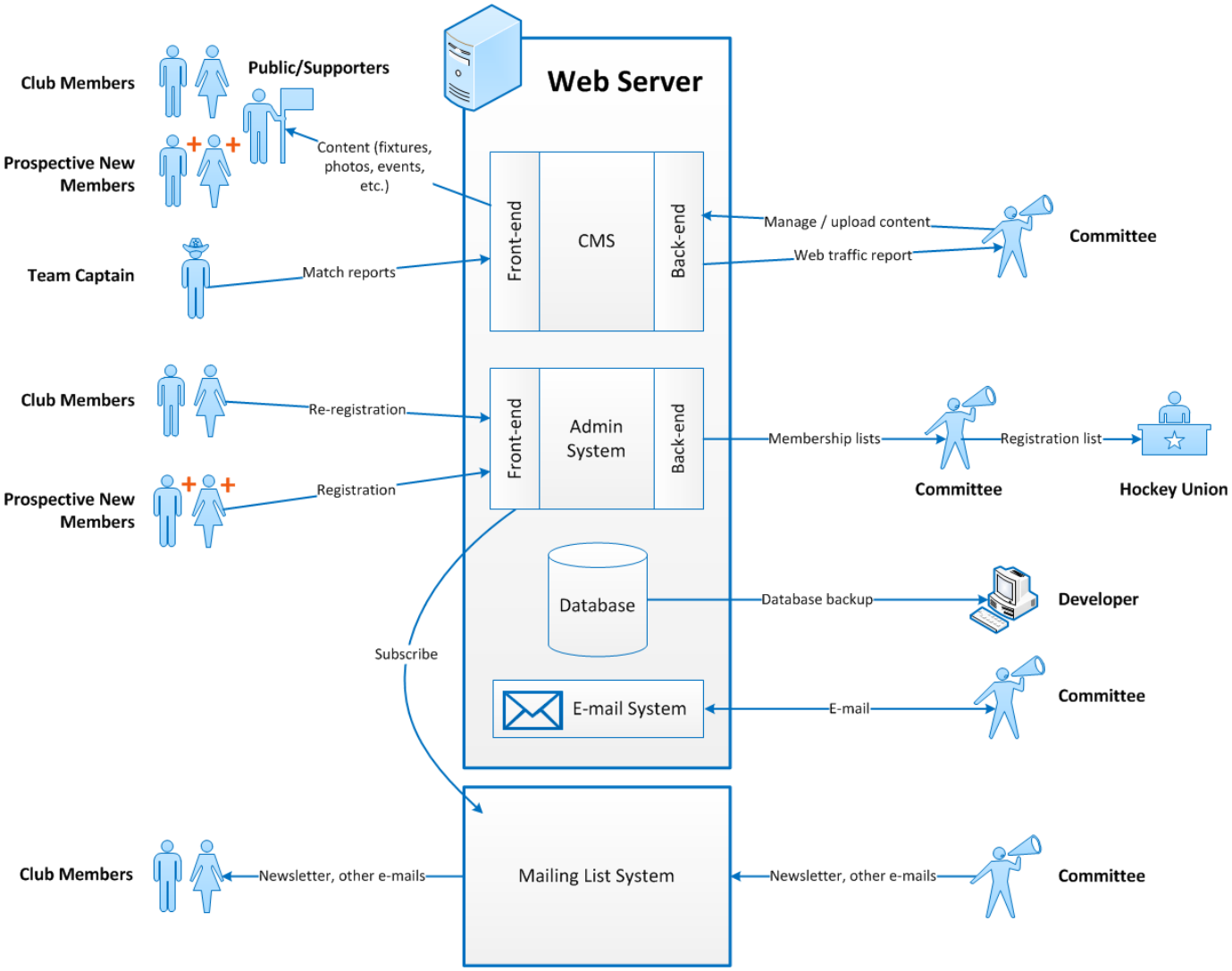

Figure 5: Conceptual solution

The bulk of the solution sits on a Web server and is made up of the following parts:

- A content management system (CMS), which is made up of a front-end (the Website) and a back-end. The front-end is used by club members, prospective new members and supporters and the public to view content (fixtures, photographs, the event calendar, etc.). The back-end is used by the committee to upload content and view traffic statistics for the site.
- An administration system, which also consists of a front-end and a back-end. It is accessed using the same address as the Website but is separate to the CMS. Club members and prospective new members use the admin system to re-register and register respectively, and the committee uses the back-end to generate the various membership lists it requires, including a registration list for the hockey union.
- A database system, which is used by both the CMS and the admin system. A backup of the database will be sent to the developer (and/or a committee member) on a daily basis.

- An e-mail system, which will be used to provide e-mail addresses for the committee.

Another part of the solution is the mailing list system. While this could reside on the same server as the rest of the solution, it will most likely be separate because of the limit most inexpensive Web hosts put on the number of e-mails that can sent per hour (for many this limit is around 300, which means that only one mail can be sent in an hour to a club with 250 members). As members (re-)register, they will be subscribed to the mailing lists relevant to them. The committee will use the system to send out newsletters and other mass mails.

The technical details of the solution:

- CMS: WordPress, which is free. It needs PHP and MySQL to function. It will require configuration and customisation, including the design and development of a theme (the look and feel of the Website).
- Administration system: to be developed using Yii, a PHP framework for Web development.
- Database: MySQL, which is free.
- Mailing list system: MailChimp, which offers free functionality that meets the requirements of the project.

6. EXPECTED BENEFITS

6.1. Tangible Benefits

The following tangible benefits have been identified:

- Cost savings
  - ❖ By replacing the printed form with a digital one, the club will save on paper and printing costs, as well as capturing costs.
  - ❖ The maintenance cost can be reduced because the content of the new site can be managed by the committee. Support may still be required on an ad hoc basis though.
- Additional revenue
  - ❖ Improved communication will lead to better event attendance, which will increase bar revenue.
  - ❖ By improving the club's image, the club will attract new players and thus earn additional subscription fee revenue.
  - ❖ By placing advertising on the Website, the club can earn additional venue. By improving the site, club members will visit it more often and by optimising it for search engines, it will attract more external visitors. This increased traffic makes the site attractive to advertisers.

The exact costs are listed below in Table 5. The figures used to calculate these costs are listed in Appendix 1.

	YEAR				
	1	2	3	4	5
Cost Savings					
Form (paper and printing)	125	127	128	130	131
Form capturing	1 042	1 054	1 067	1 079	1 092
Current Website operating costs	4 200	4 200	4 200	4 200	4 200
Total excl. inflation	*5 367*	*5 381*	*5 395*	*5 409*	*5 423*
Inflation multiplier	*1.061*	*1.126*	*1.194*	*1.267*	*1.345*
Total incl. inflation (6.1%)	*5 694*	*6 057*	*6 443*	*6 854*	*7 291*
Additional Revenue					
Additional bar income	4 000	5 000	6 000	6 500	7 000
Additional member income	4 200	4 536	4 899	5 291	5 714
Website advertising	500	1 000	2 000	2 500	3 000
Total	*8 700*	*10 536*	*12 899*	*14 291*	*15 714*
Totals	**14 394**	**16 593**	**19 342**	**21 145**	**23 005**

Table 5: Tangible benefit figures

6.2. Intangible Benefits

The following intangible benefits have been identified:

- Several changes will lead to the club's image being enhanced:
  - The new and improved look and feel of the Website.
  - The committee being able to update the site's content more regularly.
  - Since no other club has an online registration form, the introduction of one will show that the club is innovative and progressive (no other hockey club in the Western Cape has an online registration form). Making registration easier also demonstrates the club and committee's commitment to ensuring members have a good experience at the club.
  - Portfolio-based e-mail addresses that are branded.
- The online form will save the club members time and effort.
- The administrative load of the committee will be lightened, saving the committee members time which they could offer to the club to do other work. This is considered intangible because the committee's time is not paid for.
- Having a central database with up-to-date contact details for each member and the reports and lists that generated from this database will aid the committee members in perform their duties. For example, they will help the treasurer collect subscription fees.

7. BUDGET AND RESOURCING

7.1. Financial Costs Breakdown

A comparison of several local Web hosting companies was made. The hosting package must:

- Support PHP and MySQL.
- Offer a sufficient number of e-mail accounts for the current committee, as well extra to allow for future expansion.
- Provide at least 1 GB of disk space (enough to cater for the Website, the database and all the mailboxes).
- Provide at least 5 GB of monthly Web traffic.

A detailed comparison can be found in Appendix 2. We suggest that Serve Hosting be used as it meets all of these criteria, is the cheapest offer, and has a good reputation.

7.1.1. Project Cost

The following are the high level costs of the project:

Work	Cost Per Hour	Total Hours	Total Cost
Project Management	300.00	19.8	5 940.00
Analysis	300.00	42.9	12 870.00
Development	300.00	58.3	17 490.00
	Grand totals	**121.00**	**R 36 300.00**

Table 6: High level project costs

This effort estimate includes a contingency of 10% (11 hours). A full cost breakdown can be found in Appendix 3.

7.1.2. Operating Costs

The on-going operating costs are as follows:

Item	Cost	Cost Per Year
Web hosting (Serve Hosting) (per month)	29.99	359.88
Domain registration/renewal		55.00
Support (4 hours a season)	300.00	1 200.00
	Total	**R 1 614.88**
	Average cost per month	**R 134.57**

Table 7: Operating costs

8. RISK PLAN

The aim of the risk plan is to describe the risk management procedure for the project. It outlines the foreseeable risks and provides one set of actions to be carried out to prevent a particular risk and another to be carried out should the risk occur.

8.1. Risk Identification

The first step in a risk plan is to identify the risks that may affect the project. Each risk is then quantified by analysing the probability of it occurring and the impact it will have on the project if it occurs. The risk is then assigned a priority value and rated.

The probability and impact are assigned a score out of 10 and the priority is calculated as:

$$\text{Priority} = (\text{Probability} + \text{Impact}) \div 2$$

Table 8 lists the project risks.

Category	Risk	No.	Probability	Impact	Priority	Rating
Requirements	The requirements have not been clearly specified.	1.	4	8	6	**Medium**
	The requirements specified do not match the stakeholders' needs.	2.	4	6	5	**Medium**
Benefits	The business benefits have not been identified.	3.	6	2	8	**High**
Schedule	The schedule does not provide enough time to complete the project.	5.	5	7	6	**Medium**
	The project is not completed on time.	6.	4	6	5	**Medium**
	The schedule does not list all of the activities and tasks required.	7.	2	8	5	**Medium**
	The schedule does not provide accurate dependencies.	8.	2	6	4	**Low**
	A part of the project is not completed on time, and another part is dependent on it.	9.	4	8	6	**Medium**
Budget	The project exceeds the estimated cost.	10.	5	7	6	**Medium**
Scope	The scope of the project is not clearly outlined.	11.	4	8	6	**Medium**
	Additional functionality is added to the scope.	12.	6	8	7	**High**

Category	Risk	No.	Probability	Impact	Priority	Rating
Issues	Project issues are not resolved within an appropriate time period.	13.	6	8	7	**High**
	Unresolved issues become new risks to the project.	14.	2	8	5	**Medium**
Acceptance	The criteria for accepting project deliverables are not clearly defined.	15.	2	8	5	**Medium**
	The committee does not accept the final deliverables of the project.	16.	2	10	6	**Medium**
	The acceptance process leaves the committee dissatisfied.	17.	2	4	3	**Low**
Communication	Lack of controlled communication causes project issues.	18.	3	7	5	**Medium**
	Key project stakeholders are not given up-to-date progress information.	19.	3	3	3	**Low**
	Stakeholders do not respond to communication timeously.	20.	8	8	8	**High**
Resources	Staff members allocated to the project are not suitably skilled.	21.	2	8	5	**Medium**
	Stakeholders are not available to perform user acceptance testing.	22.	6	8	7	**High**

Table 8: Project risks and prioritisation

8.2. Risk Containment Plan

The risk containment plan includes preventative actions that can be taken to try to avoid the risk and contingent actions to take to lessen the risk's impact should it occur. It is detailed over the next few pages in Table 9.

Category	Risk	No.	Rating	Preventative Actions	Contingent Actions
Requirements	The requirements have not been clearly specified.	1.	**Medium**	Ensure that all requirements are ascertained and described.	Determine what the missing requirements are and amend the project plan as is necessary, attempting to minimise the impact to the schedule.
	The requirements specified do not match the stakeholders' needs.	2.	**Medium**	Make sure that all the stakeholders' requirements are ascertained and described.	Update the requirements and amend the schedule.
Benefits	The business benefits have not been identified.	3.	**High**	Identify all business benefits.	Attempt to identify any missing benefits and determine if it is worth continuing with the project
Schedule	The schedule does not provide enough time to complete the project.	5.	**Medium**	Plan everything as thoroughly and in as much detail as possible, paying particular attention to task time lengths.	Change the date of delivery (implementation).
	The project is not completed on time.	6.	**Medium**	Plan everything as thoroughly and in as much detail as possible, paying particular attention to task time lengths.	Change the date of delivery (implementation).
	The schedule does not list all of the activities and tasks required.	7.	**Medium**	Perform a thorough investigation into what activities and tasks are required and document them fully.	Amend the schedule, attempting to keep the project on track and on time. If need be, change the date of delivery (implementation).

Category	Risk	No.	Rating	Preventative Actions	Contingent Actions
	The schedule does not provide accurate dependencies.	8.	**Low**	Plan everything as thoroughly and in as much detail as possible, concentrating on sub-task dependencies; ensure that enough time is allocated to tasks to ensure completion.	Amend the schedule, attempting to keep the project on track and on time. If need be, change the date of delivery (implementation).
	A part of the project is not completed on time, and another part is dependent on it.	9.	**Medium**	Plan everything as thoroughly and in as much detail as possible, concentrating on sub-task dependencies; ensure that enough time is allocated to tasks to ensure completion.	Amend the schedule, attempting to keep the project on track and on time. If need be, change the date of delivery (implementation).
Budget	The project exceeds the estimated cost.	10.	**Medium**	Ensure accurate estimates are given by resources with adequate knowledge of and experience on the domain of the project.	Report to the project sponsor and work with them to assess whether it is worth continuing the project.
Scope	The scope of the project is not clearly outlined.	11.	**Medium**	Present the scope to the stakeholders and ensure that it is fully understood and meets their requirements.	Amend the scope and present it back to the stakeholders for confirmation.
	Additional functionality is added to the scope.	12.	**High**	Ensure that the scope is accurately defined at the beginning of the project.	Push for additional items to become future work. If this is not possible, amend the scope and schedule.

Category	Risk	No.	Rating	Preventative Actions	Contingent Actions
Issues	Project issues are not resolved within an appropriate time period.	13.	**High**	Ensure that all issues are communicated as soon as they arise and that enough time is allocated for them to be resolved.	Resolve the issues as quickly as possible so as to minimise their impact. Communicate the issues to the project sponsor. Amend the schedule if required. If need be, change the date of delivery (implementation).
	Unresolved issues become new risks to the project.	14.	**Medium**	Ensure that all issues are communicated as soon as they arise and that enough time is allocated for them to be resolved.	Communicate the issues to the project sponsor. Amend the schedule if required. If need be, change the date of delivery (implementation).
Acceptance	The criteria for accepting project deliverables are not clearly defined.	15.	**Medium**	Make sure that acceptance criteria are clearly defined and known to all.	Determine the exact acceptance criteria and modify the project plan as required.
	The committee does not accept the final deliverables of the project.	16.	**Medium**	Ensure that all deliverable quality criteria and standards are known.	Attempt to bring the deliverables up to the required standard.
	The acceptance process leaves the committee dissatisfied.	17.	**Low**	Ensure that all the committee's acceptance criteria are clearly defined.	Discuss the issues with the project sponsor and attempt to rectify the situation.
Communication	Lack of controlled communication causes project issues.	18.	**Medium**	Implement proper communication management processes.	Resolve the issues as quickly and thoroughly as possible. Ensure that all future communication is adequate.
	Key project stakeholders are not given up-to-date progress information.	19.	**Low**	Determine all the communication requirements and create a thorough communications plan that is acceptable to all.	Update stakeholders as necessary and amend the communications plan.

Category	Risk	No.	Rating	Preventative Actions	Contingent Actions
	Stakeholders do not respond to communication timeously.	20.	**High**	Ensure that communication timelines with stakeholders are set and understood, and that stakeholders understand the impact of delayed responses.	Alert the project sponsor and amend the project schedule if required.
Resources	Staff members allocated to the project are not suitably skilled.	21.	**Medium**	Ensure that staff members with suitable knowledge and experience are selected for the project.	Find replacements as quickly as possible.
	Stakeholders are not available to perform user acceptance testing.	22.	**High**	Ensure that stakeholders are given early notice of user acceptance testing requirements, particularly time requirements.	Alert the project sponsor and amend the project schedule if required.

Table 9: Risk plan

9. FEASIBILITY ASSESSMENT

The feasibility of the project is evaluated in this section using a number of criteria in order to provide a recommendation as to whether or not to proceed with it.

9.1. Cost Justification

The cost/benefit analysis of the project is presented below in Table 10.

	YEAR					
Cash Flow	**0**	**1**	**2**	**3**	**4**	**5**
Discount rate*: 4.45%						
Present value (PV) factor	1.000	0.957	0.917	0.878	0.840	0.804
Development cost	-36 300					
Operational cost	-1 615	-1 713	-1 818	-1 929	-2 046	-2 171
Benefits derived		14 394	16 593	19 342	21 145	23 005
Costs (time adjusted)	-37 915	-1 640	-1 666	-1 693	-1 719	-1 747
Benefits (time adjusted)		13 781	15 209	16 974	17 765	18 505
Net benefit (time adjusted)	-37 915	12 140	13 543	15 281	16 046	16 758
Cumulative net benefits	**-37 915**	**-25 774**	**-12 231**	**3 050**	**19 096**	**35 854**

Table 10: Cost/benefit analysis

To evaluate these figures, the following values have been calculated:

- **Payback period**: approximately 3 years
- **Net present value (NPV)**: R35 854
- **Return on investment (ROI)**: 77.30%

9.2. Other Feasibility Issues

The following are other feasibility issues that have been identified:

- Business feasibility
  - ❖ The solution is consistent with the club's strategic goals and business drivers.
  - ❖ The solution will enhance the club's image and make it look more professional.

* This is the current interest rate of the club's savings account.

- Technical feasibility
  - The source code of the solution is a deliverable, mean that the club has full access to the solution and can choose to use another development partner for future enhancements or maintenance if it wishes.
  - The solution can easily be migrated to a different Web host with minimal impact on the club should the suggested hosting company not be satisfactory.
- Time feasibility
  - The project can be delivered well before the specified date, allowing the club to begin deriving benefit from it sooner than expected.
- Operational issues
  - Training will equip committee with the skills to manage system and the training document will ensure that future committee members can learn how to operate the system.
  - The system will cut down the committee's administrative load.
  - The operating costs are lower than the specified budget.
- Motivational feasibility
  - The committee supports the solution.
  - Other stakeholders and members should support it because it will be easy to use and save them time and effort.

9.3. Recommendation

The solution is aligned with the club and committee's stated business drivers and it will meet the stakeholders' requirements. In addition, further functionality can be added in the future to extend it. The club will not be locked into using any particularly vendor for development or hosting, meaning that there is flexibility to choose new partners if desired.

Given that the cost/benefit analysis yields positive values for the NPV and ROI, the project can be recommended from a financial point of view. However, the estimated project cost exceeds the budgeted amount by 45%, though the project will pay for itself in approximately 3 years. The operational cost, on the other hand, is less than the budgeted figure.

The following is a summary of the key figures:

Project cost:	R36 300	**Budgeted cost:**	R25 000
Operating cost (per month):	R134.57	**Budgeted cost:**	R250
Net present value (NPV)	R35 854		
Return on investment (ROI)	77.30%		

In addition to these financial benefits, there are several intangible benefits in the form of raising the club's image, saving members time and effort, and easing the committee's administrative load.

The project will be completed well before the deadline, though there are several risks that may impact its schedule and push out the implementation date. However, with strong project management and support from stakeholders these risks can be avoided. Should any of these risks occur and affect the schedule, there should still be sufficient time to meet the deadline.

Given the above and assuming the project budget can be raised and its cost covered, it is recommended that the club proceed with the project.

10. APPENDICES

10.1. Appendix 1: Benefits Calculations

		YEAR				
		1	2	3	4	5
Additional members per season: 3						
Costs						
Total members / forms		250	253	256	259	262
Paper/printing cost (per page)	0.50					
Total paper cost		125	127	128	130	131
Capturing time (per form, in minutes)	5.00					
Capturing cost (per hour)	50					
Total capturing time (hours)		20.83	21.08	21.33	21.58	21.83
Total capturing cost		1 042	1 054	1 067	1 079	1 092
Revenue						
Current total bar revenue	50 000					
Additional bar revenue		4 000	5 000	6 000	6 500	7 000
Average member fee		1 400	1 512	1 633	1 764	1 905
Total additional member revenue		4 200	4 536	4 899	5 291	5 714
Website advertising		500	1 000	2 000	2 500	3 000

Table 11: Detailed benefits calculations

10.2. Appendix 2: Comparison of Selected Web Hosting Offers

Hosting Company:	WebAfrica	WebAfrica	Afrihost	Afrihost	Hetzner	Serve-Hosting	Ample Hosting	RSAWEB
Package:	Basic	Standard	Gold Home	Platinum Home	Basic	Serve 1	Echo 3	Business
PHP support?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MySQL database?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of e-mail accounts	15	30	75	200	100	Unlimited	250	100
Disk space	1 GB	2 GB	2 GB	3 GB	1 GB	1 GB	4 GB	1 GB
Traffic	Unlimited	Unlimited	2 GB	3 GB	20 GB	12.5 GB	100 GB	Unlimited
.co.za Domain registration cost (per year)	R 99	R 99	Free	Free	R 79	R 55	R 79	R 50
Price (per month)	R 99	R 149	R 39	R 49	R 99	R 29.99	R 42	R 99

Table 12 : Comparison of selected Web hosting offers

10.3. Appendix 3: Detailed Project Cost Breakdown

Estimated hours	***92.00***	
Incl. contingency (hours)	*11.00*	
Estimated cost	***36 300.00***	

PROJECT MANAGEMENT

Cost per hour	***300.00***
Estimated hours	***18.00***
Add contingency (10%)	***1.80***
Final cost	***5 940.00***

Meetings and report-backs	6.00
High-level project plan and effort estimates	1.00
Project Defition Document	5.00
Weekly tracking	3.00
Change management	1.00
Project review	2.00

ANALYSIS

Cost per hour	***300.00***
Estimated hours	***39.00***
Add contingency (10%)	***3.90***
Final cost	***12 870.00***

Workshops	4.00
Requirements Specification	8.00
Functional Specification	8.00
Website and interface design	4.00
Database design	1.00
Testing	4.00

Specification revision and review	4.00
Training	2.00
Training documentation writing	2.00
Project review	2.00

DEVELOPMENT

Cost per hour	***300.00***
Estimated hours	***53.00***
Add contingency (10%)	***5.30***
Total cost	***17 490.00***

Framework	2.00			
Database Design		1.00		
Database Implementation		0.50		
Project Setup		0.50		
Functionality	32.00			
CMS		12.50		
Configuration			1.00	
Customisation			11.50	
Website theme design and dev.				8.00
Selection lists display				0.50
Fixture list display				2.00
Photo gallery display				0.50
Match reports display				0.50
Administration System		19.50		
Registration form/process			5.00	
Re-registration form/process			5.00	
Selection list upload			0.50	
Fixture list upload/processing			8.00	
Match report form			1.00	
Testing	4.00			
Code testing		1.00		

Code review		2.00		
Performance testing		0.50		
Security testing		0.50		
UAT	6.00			
Bug fixing		2.00		
Enhancements		4.00		
Implementation	7.00			
Deployment		1.00		
Go-live support		6.00		
Project review	2.00			

Table 13 : Detailed project cost breakdown