**3. Results and Discussions**

**3.1 Summary of Observations**

Based on the data gathered from the interviews, the project team had arrived to the following observations regarding the current procedures on outreach program activities done in the ReCOP office.

1. The manual process of outreach activity requisition and approval from which sometimes the requests were not being tracked and was lost;

2. The lack of visibility on the list of bonafide partners, communities, beneficiaries, outreach events and schedules;

3. The poor advertisement of outreach programs which results to low participation rate;

4. The non-unified format for the outreach programs and reports which are vital in assessing the viability of the event;

5. The absence of notifying mechanisms for event directors and participants about event cancellations or rescheduling; and

6. The limited number of partners and linkages as well as event sponsors and participants.

The above observations will be the basis for the functions and design of the web application that the project team will be creating to adhere to the issues encountered by the client.

**3.2 The Proposed Project Details**

**Project Features**

The following are the proposed features of the based on the observations that was mentioned in the earlier section of the chapter.

**Mobile-Responsive Web Application.** Nowadays, using gadgets such as mobile phones, tablets, and laptops etc. enables visitors to find websites anytime and anywhere given that internet connection is available. The researchers utilized frameworks like Python-Flask and Bulma CSS in order to achieve a website design that will scale to almost all devices available today.

**Partners and Beneficiaries Visibility.** The proposed website will provide a list of partners and beneficiaries currently affiliated to SSCRdC. In addition, the users will be able to search through the list to find prospect outreach sponsors and receivers.

**Outreach Attendance and Evaluation Reports.** The system will enable the client to monitor event participation rates as well as the participant’s feedback and rating on outreach program activities. The reports were displayed in tables and graphs.

**Outreach Updates and Notifications.** Website will enable users to stay updated about the latest news and status about upcoming, ongoing and completed outreach program activities. The website will also enable push notifications through emails an hour before an outreach activity is to be conducted.

**Outreach Activities Advertisement.** The website will promote and advertise in-house outreach activities that will help the school to be known not just for providing a good quality education but also for helping its partner communities and the environment.

**Faster Proposal Approval.** Through ReCOP-ComEx Website, manual process of requesting proposal can be easy and lessen the time it takes to approve. The website will be sending the activity proposal requests to the offices concerned via email. The email will be containing the attached documentary requirements and an acknowledgement form that the receiver must accomplish to sign the proposal.

**Partners and Beneficiaries Referral.** The website will require newly signed users to refer at least one community or organization the school can help or can be partners with. The referred parties will be receiving an email with the link to website’s sign-up page.

**Project Narrative**

In addition to the features mentioned above, the project team also defined the roles and responsibilities the actors of the proposed system will be taking. A Use-Case Diagram and Activity Diagram was used in order to analyze and summarize the processes as well as the people involved in the development of the system itself.

**Recoletos Community Outreach Program (ReCOP) Office Administrator.** The main client and the administrator of the website will be given the following roles and privileges: (1) view on status of all the outreach activities, (2) approval and declination of proposed outreach activities created by partners and linkages, (3) cancelation of events due to certain reasons like bad weather and insufficient funds (4) creation of institutional outreach activities, (5) arrangement of Memorandum of Agreement (MOA) for partners and linkages (6) notifying body for upcoming outreach activities, (7) budgeting for institutional outreach activities, (8) scheduling of outreach activities, and (9) access to list of partners and linkages, prospect beneficiaries and participants for an outreach.

**Registered Users.** Registered users of the system are members institutional and student organizations as well as people outside SSCRdC who wished to participate in outreach program activities. Registered users will be given access to the following actions: (1) viewing, searching and joining outreach activities, (2) referral for prospect partners and linkages, (3) donating capability for outreach activities, and (4) evaluating outreach program activities.

**Partners and Linkages**. Partner communities and companies of SSCRdC will have the following roles and responsibilities granted by the system: (1) proposal of outreach activities, (2) cancelation of outreach events, (3) recipient of MOA issued by the Re-COP Office, (4) notifying body for participants on its proposed outreach programs, (5) sponsorship fo the outreach program activities conducted by the ReCOP Office, and (6) referral for possible partners and linkages.

**Beneficiaries**. The beneficiaries of the website can do the following actions when using the system: (1) access to the list of outreach activities, (2) requisition and reporting for the beneficiaries’ needs and (3) the recipient of outreach donations and proceeds.

**Design Issues**

**Internal Design.** The project team designed the database structure using Class Diagram from which the data specifications and constraints of the inputs were identified. Furthermore, the database engine used for the website development and testing was XAMPP which will later be migrated to SQLAlchemy upon the project deployment.

**External Design.** The user interface of the website was designed using Bulma CSS Framework. Bulma CSS offers customization for mobile responsive websites like screen optimization and icon creation. The color scheme used in the proposed system was inspired by the colors of SSCRdC logo – green and gold.

**Modules and Functions.**  The following are the list of modules and functions that users can access while in the website.

**Sign up.** This module user provides the basic information in order to access the website in terms of joining outreach activities.

**Login.** User can login by providing username and password.

**Home.** User can view the news and current events about outreach activities and information about the ReCOP-ComEx Website.

**Partners.** Contains the list of bonafide and available partner communities and companies and beneficiaries associated to SSCRdc.

**Events.** User can view and participate on a particular outreach activities based on the listed events in a list or calendar view. Events can be filtered by according to the following categories: spiritual, education, health, livelihood, environment and socio-political concerns.

**Contact Us.** Contains form which user can contact the admin of the ReCOP-ComEx Website if there are questions and concerns by providing information such as name, e-mail address, contact number and inquiry.

**My Profile.** Users can update basic information, view events attended, rate and give feedbacks, and change password for security in settings.

**Donate.** Registered users can donate any amount for an outreach activity that serve as donation for helping the community.

**Reports.** Admin and Partners have this module to show the summary of numbers of attendees in an event, ratings and reviews from the user who had joined the event in order to improve such activities.

**Implementation Issues**

**Hardware and Software Requirements.** The tables below show the proposed hardware and software requirements of devices to be used for to access proposed system.

**Table 5.** Hardware Requirements for Web

|  |  |  |
| --- | --- | --- |
| Hardware | Minimum | Recommended |
| Processor | 1 GigaHertz (GHz) | 3.4 GHz |
| RAM | 1 GB for 32-bit  2 GB for 64-bit | 2 GB for 32-bit  4 GB for 64-bit |
| Hard disk space | 16 GB for 32-bit OS  20 GB for 64-bit OS | 250 GB for 32-bit OS  500 GB for 64-bit OS |

**Table 6.** Software Requirements

|  |  |  |
| --- | --- | --- |
| Software | Minimum | Recommended |
| Browser | Google Chrome  Version 70.0.3538 | Google Chrome  Version 71 and up |
| Operating System | Microsoft Windows 8.1 | Microsoft Windows 10 |
| Database Engine | XAMPP 3.2.2.0 | XAMPP 3.2.2.0 |

**Security.** The project team took the following security measures in the coding and development process of the website to ensure that the final output will be fool-proof and secured.

**Separation of Concerns.** The project developers constructed the file structure or the blueprint of the ReCOP Website in a way that the data access layer (queries), business logic layer (code manipulations) and presentation layer (external design) were separated from one another.

**Login Credentials.** The users will be asked to enter a username and password whenever a transaction is to be made. Additionally, the passwords will be stored and encrypted using password hashing.

**Login Required Decorator.** A decorator is a feature of Python coding structure which can be used to inject additional functionality to one or more functions. The project team used login\_required decorator to redirect unauthorized module access to the default landing page of the website.

**Flask WTF.** Form validations were created by the developers using the Flask WTF plugin. Flask-WTF plugin also generate Cross-Site Request Forgery (CSRF) token which restricts unauthorized and malicious command inputs.

**Training and Maintenance.** The project team will conduct training to all the staffs involved of ReCOP Office and other offices involved in signing the outreach proposals such as Office of the President, Office of the Vice President for Academics, Office of the Vice President for Administration and Office of the Student Services and Development of SSCRdC. The project team will assign the quarterly maintenance to the school’s ICT office. If users encountered problems relating to the backend structure of the website, it is the only time that the project team will interfere to resolve the problems.

**3.3 Project Budget**

A total of ₱ 51, 148.00 will be spent for the completion of the project. These include the purchase of the domain name of the website and the development costs. Furthermore, the benefits is also listed to assess if the project would be worthwhile. Note that all of these figures are the values gained or lost over a year.

**Table 5.** Cost and Benefit Analysis for ReCOP-ComEx Website

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COSTS** | | |  | **BENEFITS** | | | |  |
|  |  |  |  |  |  |  |  |  |
| **\*One-Time Cost** | | |  | **\*Tangible** | | | |  |
|  |  |  |  |  |  |  |  |  |
| Development Cost | | | 50,000.00 | Less Papers | | | | 5,160.00 |
|  |  | **Total:** | **50,000.00** | Additional donations | | | | 32,500.00 |
|  |  |  |  |  |  |  | **Total:** | **37,660.00** |
|  |  |  |  |  |  |  |  |  |
| **\*Recurring Cost** | | |  | **\*Intangible** | | | |  |
|  |  |  |  |  |  |  |  |  |
| Domain Name | | | 1,148.00 | Faster approval for proposals | | | | 0.00 |
|  |  | **Total:** | **1,148.00** | Donors and beneficiaries visibility | | | | 0.00 |
|  |  |  |  | Improve brand image | | | | 0.00 |
|  |  |  |  | Increase partners and linkages | | | | 0.00 |
|  |  |  |  | Improve event success rate | | | | 0.00 |
|  |  |  |  |  |  |  | **Total:** | **0.00** |

**Budget Narrative**

Since the desktop units, hard drives, network infrastructure, web hosting and cloud backup were readily available and was established already by the Information Communications Technology (ICT) Department of the institution, the researchers did not find the need to purchase these items.

In this case, the researchers will be utilizing the existing technologies and equipment for the implementation phase of the project. However, the following were the items that the project team will still be adding and procuring.

**Development costs.** This is the fee that the project team will be charging for the four months of working on with the project. The cost was divided and will be distributed among five members of the project team, having ₱ 10,000 salary each.

**Domain Name.** This is the actual purchase for the website’s address. The project team will be purchasing this from GoDaddy.com and has an annual subscription amount of ₱ 1,148.00.

**Budget Feasibility**

In order to prove that cost spent by the project would be worthwhile, a Net-Present Value and Payback Analysis were done. However, the benefits of the project must be enumerated and justified before proceeding to the analysis.

**Less Papers.** The researchers multiplied the average paper rim usage of the department for its outreach transactions which is 2 rims per month by the paper rim price of ₱ 215.00. The product was multiplied by 12 to get the annual value of ₱ 5,160.00.

**Additional Donors.** Based on an interview with an officer from the Re-COP Office, an average donor donates an estimated amount of ₱ 2,000.00. The Facebook page of SSCRdC Re-COP currently has 1,300 followers which shows the amount of people interested in its outreach program activities and having access to internet. Thus, this can be calculated by dividing the number of social media followers by number of months in five years then multiplying it by the average donation amount. Doing the math, a value of ₱ 43,333.33 was gained.

Lastly, the ReCOP Office is a non-profit department, meaning the organization’s main goal is to provide welfare and service among the people who are in need. The intangible benefits that the project will provide: faster approval for proposals, donors and beneficiaries visibility, improved brand image, increased partners and linkages and improved event success rate will reflect to the mission and vision of this institution.

**Table 6.** Net Present Value and Payback Analysis for the ReCOP Website



The table above is the NPV and Payback Analysis with a discount rate of ten (10) percent. This shows that the project has payback in its second year of implementation. Moreover, a Return of Investment (ROI) of 118% percent was also calculated. This shows that the project will be a worthwhile one.

**3.4 Risk Management Plan**

In order to minimize the number and occurrences of the project risks, the project team had arrived in the following risk management plans.

Firstly, the group performed data gathering and data analysis. They conducted interviews, requested forms and other documents related to the study which aided in narrowing down the scope of the project into the expected outcomes of the client.

Aside from the weekly status reports and meetings, each team member was expected to report daily and update tasks via a Google Sheet Dashboard. This is to ensure that all the deliverables of the project arrives in good shape and co-members who are having difficulties on the task assigned can be helped.

Furthermore, the project manager will update the risk register and formulate solutions overhand if an unavoidable risk is certain to occur. In this case, the project team will have a greater chance of surviving the problem.

The table below shows the possible risks that the project team may encounter as the development phase progresses. In addition, the counter precautions are also indicated.

**Table 7.** Risk Register for the ReCOP Website Development

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Description** | **Probability** | **Impact** | **Response** | **Trigger** |
| 1 | Unfamiliarity to the technology | Medium | High | Integrate lectures about the website in the organization’s activities and seminars as well as in its social media page. | Stakeholders has no knowledge on how the website works. |
| 2 | Prototype running slow | Medium | High | Simplify form transactions and plugin codes used. Database queries must be as simple as possible. | Having many people are connected to the website. |
| 3 | Scope inflates | Medium | Low | Focus and finish first the initial objectives and features of the project. Since the methodology is prototyping, changes or additions can be integrated in the next update. | The scope uncontrollably change and grow due to client requests and other factors. |
| 4 | Resistance due to budget | Medium to High | Medium | Consider utilizing the existing hardware in the organization instead of buying new ones. Use open–source software if the security will not be compromised. | Sponsor has no enough financial capability to support the project further. |
| 5 | Conflict over changes | Medium | High | Review the organization’s vision, mission and objectives before planning or implementing certain change. | Changes made by the application conflicts with the interests and rules of the organization. |