` COMPANY PROFILE

Philippine State College of Aeronautics (PhilSCA)

The institution has undergone several name changes throughout its history, starting as Basa Air Base Community College from June 1969 to January 26, 1977, and then becoming the Philippine Air Force College of Aeronautics until June 3, 1992. It is currently known as the Philippine State College of Aeronautics. PhilSCA operates multiple campuses, including the main campus in Villamor, Pasay City, and additional campuses in Lipa-Batangas, Pampanga, and Mactan-Cebu. There are also extension campuses in Palmayo, Floridablanca, and Medellin, Cebu, enhancing its reach and accessibility for students across the Philippines.

PhilSCA was founded on April 1, 1968, as Basa Air Base Community College under AFP Regulation G.168-342 and received official approval from the Department of Education and Culture on April 23, 1969. The college emerged from the urgent need to address educational gaps for the families of personnel at the 5 Fighter Wing, the premier jet fighter unit of the Philippine Air Force, located in Floridablanca, Pampanga. With no nearby secondary or tertiary institutions, community efforts transformed a dilapidated building into classrooms, enabling local military families to pursue education despite challenging conditions.

On January 26, 1977, President Marcos signed Presidential Decree No. 1078, converting the college into the Philippine Air Force College of Aeronautics, with its main campus at Villamor Air Base, Pasay City. Although designated a state college, it operated as a non-profit institution without government subsidies. Additional campuses were later established in various air bases, enhancing its educational reach.

The vision to merge the college with existing pilot training programs led to further developments, culminating in Republic Act No. 7605 signed by President Corazon C. Aquino on June 3, 1992, which officially renamed it the Philippine State College of Aeronautics. In 1994, PhilSCA established its own flight school to train

private and commercial pilots. In 1997, the college acquired its first trainer aircraft, a Tampico STB9-C, donated by Senator Raul Roco, further bolstering its aviation training capabilities. Today, PhilSCA continues to thrive, adapting to changing educational landscapes and providing high-quality training in aviation.

VISION

The Philippine State College of Aeronautics (PhilSCA) is a leader institution committed to the scientific advancement in aeronautical sciences, technology and liberal arts responsive to the dynamic and emerging demands for world class professionals of the aviation industry.

MISSION

To produce world-class professionals in aeronautics, technology and liberal arts imbued with commitment, excellence, responsibility and integrity through advanced level of instruction, research, extension and production.

GOALS AND OBJECTIVES

The programs and objectives of the College shall be undertaken in such a manner as to reflect its aspiration to be the center for:

(a) Professional and advanced technical training in the field of aeronautics and liberal arts;

(b) Research and advanced studies, and

(c) Progressive leadership in its field of specialization as mandated by its charter.

In view of the above, the college shall strive to implement programs and projects that shall:

(a) Transmit and disseminate knowledge and skills relevant to the manpower needs of the country;

(b) Discover and disseminate new knowledge/technology needed for the development of the country; and

(c) Enhance, preserve and disseminate national culture and sports; and produce progressive leaders, trained, skilled and semi-skilled manpower for national development.

BUSINESS CASE

TITLE: WEB- BASED RESEARCH MANAGEMENT REPOSITORY SYSTEM WITH DATA ANALYTICS FOR PHILIPPINE STATE COLLEGE OF AERONAUTICS

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Executive Summary

The Philippine State College of Aeronautics faces significant challenges in managing its research processes due to a lack of a centralized, digital repository system. This presents an opportunity to create a more efficient and accessible research management platform. The primary organizational goal is to streamline the research management process, ensuring all stakeholders have timely access to data, resources, and analysis tools. The proposed project's Measurable Organizational Value (MOV) will focus on improving the efficiency of research tracking, providing real-time access to data, and incorporating advanced data analytics to assist in strategic decision-making. The project explores various alternatives, including continuing with manual processes, adopting off-the-shelf software, and developing a custom web-based system. After evaluating the options, the recommended solution is the custom-built web-based system due to its adaptability, scalability, and capacity to meet the institution's specific needs.

Introduction

Philippine State College of Aeronautics has handled its research activities through manual procedures, which has resulted in data loss, tracking research progress challenges, and inefficiencies. Research management requires a more methodical approach in light of the current circumstances. With the help of data analytics, this project seeks to improve research tracking while also gaining insights

that can spur innovation and improve decision-making. The principal aim is to establish an online research management repository system providing secure storage, analytical tools, and real-time data access. By achieving these objectives, the institution will be able to better manage its research outputs, which will be in line with its overarching goals of promoting academic excellence,this improvement will benefit both the researchers and the students who use the Web-Based Research Management Repository System with Data Analytics. Its primary goal is to provide students with specific online access to save their final projects.

Alternatives

Two main alternatives have been identified for addressing the research management needs of the institution. The first alternative is to continue with the current manual system, which requires no upfront cost but offers limited scalability and is prone to file loss and inefficiency. Second alternative, and the most promising, is to develop a custom web-based research management repository system. This alternative allows for tailored features that manages, preserves, collects, and stores the thesis or research documents, and Data analytics can identify the researcher’s focus agenda.

Analysis of Alternatives

To meet the requirements of the institution in terms of research management, the analysis offers two options. Using the current manual system is the first option; it has no upfront costs and doesn't require any training. However, it has several drawbacks, including limited scalability, inefficiency, and a high risk of file loss, which can result in higher labor costs and fewer strategic insights. On the other hand, building a personalized web-based research management repository system has upfront costs and training requirements, but it also offers customized features that improve document management, simplify processes, and offer insightful data analytics to spot research trends. This option has some short-term drawbacks, but

overall it is better for research management because it is more in line with the institution's long-term objectives.

Proposed Recommendation

It is recommended to create a unique web-based repository system that will increase scalability and efficiency in order to enhance the institution's research management. Prior to implementing the system, involve stakeholders in workshops to get their feedback on features they would like to see. Make a detailed project plan with deadlines and testing stages included. To ensure that employees are utilizing the new system efficiently, give them thorough training and continuous support for any problems that may come up. Following deployment, use key indicators to track the system's performance over time in order to assess its effectiveness and make necessary modifications in response to user input. In order to keep the system current with research management practices and functional, allocate funds for routine maintenance and updates.

Required Funding and Support

To successfully implement the proposed solution, it's important to secure enough funding for all stages, including development, testing, and deployment of the system. This funding will cover costs like software development, hardware, ongoing maintenance, and technical support. Additionally, strong support from the college administration, IT department, and faculty is crucial for a smooth rollout and ongoing usage of the system. We also need to provide training programs to ensure that everyone is comfortable using the new system. This will help maximize its potential and ensure that our investment brings long-term benefits to the institution.

PROJECT CHARTER

TITLE: WEB-BASED RESEARCH MANAGEMENT REPOSITORY SYSTEM WITH DATA ANALYTICS FOR PHILIPPINE STATE COLLEGE OF AERONAUTICS

Names and Roles: Programmer: Andres, Wancho Bong A.
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Project Description

This project aims to design a Web-Based Research Management Repository System for the Philippine State College of Aeronautics (PhilSCA) to harmonize the increasing nature of handling numerous types of research. Given that the Research Office is one of the target clients of the system, the current management of research data is intended to be less chaotic and as efficient as possible. This repository will therefore help the researchers, postgraduate students, and faculty to store their research outputs and sort them given analysis in a more efficient and organized manner. The files and documents will be easily accessible due to an easy-to-use interface and at the same time, there will be other search and filter options to enable fast access to the specific documents. Furthermore, incorporating big data analytics tools will help the researchers in finding important results that will market the value of the research being done. To the Research Office, this system shall improve the monitoring of research activities and allow the Research Office to be attentive to

compliance issues thereby assisting in making the right decisions. The repository will also enhance the place's visibility and impact on the research outputs, and thereby encourage the values of invention as well as collaboration at PhilSCA.

Background

The methods currently accessible to researchers for handling the preservation of study data whether it be dispersed across several internet platforms or physical media make their jobs more difficult than they need to be. Whether it is the difficult task of handling projects that call for teamwork, the availability of historical materials in the form of research papers, or the absence of a haven for important data, these issues impede the research process.

This college realizes that to sustain the position of the leading innovative center, researchers require modern tools for a better organization of their activities. That's where the idea of a web-based platform comes in: On one hand, it is to enhance the overall ease of conducting research by providing a unified environment for data collection and sharing, as well as, storage and publishing of the research outcomes.

Description of the challenge or opportunity

The following are the current issues that researchers at PhilSCA experience in performing their tasks. This paper will therefore seek to explain how research data appears to be somewhat 'tiny,' dispersed, and often located in both physical and digital media which makes it challenging to gather, disseminate, and search. This absence of such a system also hampers communication as researchers are unable to easily share their research or collaborate in real-time on a project. Furthermore, the volume, availability, and collection to analysis are voluminous and complicated to handle without proper tools for interpretation. Issues of security add to the conversation since research data is not well protected and critical information remains at risk. This project presents a great chance to overcome these challenges

through a unified platform that allows organizing data, enhancing cooperation among researchers, performing analysis, and disseminating results safely.

Measurable Organizational Value (MOV)

A Web-based Research Management Repository System with Data Analytics Integrated for PhilSCA will bring tangible organizational benefits since the geared-up research scheme will pose an enhanced program. This paper hopes to minimize the difficulties in data sharing, improve efficiency in data sharing among the stakeholders in PhilSCA, and provide a secure database and tools for analysis for the faculty, students, and other stakeholders in the research process.

The system will be implemented within one year and at no extra cost to the institution away from mobilizing its human and material resources. On implementation it is expected to cut half the time spent on data management; enhance collaborative research projects by forty percent; achieve a hundred percent compliance with institutional and regulatory data protection and security measures; and finally, increase reliance on data analysis for research purposes to increase by thirty percent within the first year of its use.

This project will bring improvement to PhilSCA because it will centralize research data, allow real-time collaborative work, and integrate advanced analytics. The long-term benefit will be evident in terms of research output and enhanced position of the institution as a pioneer of more research in aeronautics in the Philippines.

Project Scope

The objective of this project is to design and implement an online system for research management and repository with data analytics for the Philippine State

College of Aeronautics. The system will consist of a managerial system of research projects including capstone and thesis submissions where people will be able to submit them and get approval for their proposals from the faculty. Users will be in a position to upload research papers, monitor approvals, and be notified of due dates, and changes made. It also should implement a role-based access control mechanism to ensure the security of research data The number of students, faculty advisors, and administrators will have different user roles. Besides, the system will incorporate data analysis to give details of trends in research works, and completion rates among others prepare different reports to assist administrators in monitoring the system. It must be easy to use on different levels, so the users of this interface will find it easy to use.

However the following are some of the important aspects that have been excluded from this project. The system will not be integrated with external databases like IEEE or Scopus; in the same way, the plagiarism check would not be an in-built feature and have to be outsourced. Also, the project does not include the procurement or the management of tangible assets such as equipment, particularly servers since it will be hosted on the cloud or built on actual infrastructure. Such activities as machine learning-based insights are also not included in this project, as well as long-term maintenance and support post-implementation. Last but not least; despite the generation of user manuals, structured institutional training sessions for system users will not be covered in this project.

Project Schedule Summary

Project Timeline

Start Date: July, 2023

End Date: June, 2024

This project should commence in July 2023 and should end in June 2024. The project will be divided into five phases: The different phases involved are

requirement engineering, design and implementation, integration and, testing, system integration, and maintenance and support.

Project Phases and Milestones

Phase	Milestones	Timeline
Phase 1: Requirements Gathering and Analysis		
* Requirement elicitation*	July, 2023	
* Use case analysis*	August, 2023	
* Feasibility study*	September, 2023	
Phase 2: System Design and Development		
* Database design*	October, 2023	
* System architecture*	November, 2023	
* Frontend and backend development*	December, 2023	
Phase 3: Testing and Quality Assurance		
* Unit testing*	January, 2024	
* Integration testing*	February, 2024	
* System testing*	March, 2024	
* User acceptance testing (UAT)*	April, 2024	
Phase 4: Deployment and Implementation		
* System deployment*	May, 2024	
* User training*	June, 2024	
Phase 5: Maintenance and Support		
* Ongoing maintenance*	June, 2024 - onward	
* Bug fixes*	As needed	
* Feature enhancements*	As needed	

Project Reviews and Review Dates

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28			
29	**Review Type**	**Frequency**	**Review Dates**
30	Weekly Status Update	Every Monday	July, 2023 - June, 2024
31	Monthly Progress Review	First Friday of every month	July, 2023 - June, 2024
32	Quarterly Steering Committee Meeting	End of every quarter	September, 2023, December, 2023, March, 2024, June, 2024
33	Annual Project Review	End of the fiscal year	June, 2024

These timelines may be adjusted if there are delays with the work that is being done or if the work rate is not as anticipated. The plan is to have constant checkups and sees to evaluate the project needs for any changes.

Project Budget Summary

The Web-Based Research Management Repository System with Data Analytics for the Philippine State College of Aeronautics has been planned to be implemented without incurring any expenses. This means that the project will utilize funds already provided for by existing institutional provisions, or will have to seek funding in the form of a grant or donations from individuals or organizations, for personnel costs, and software requirements, etc. So there are no direct cost estimates, but one must consider the costs associated with having the opportunity cost and indirect cost of the project.

Quality Issues

The web-based research management repository system is responsible for storing and analyzing various research data, including documents, research statistics, and analytics results. A potential issue is the inaccuracy and inconsistency of data input or output. This could arise due to several reasons such as human error during data entry, improper system validation, or integration issues between different modules (e.g., data analytics and repository systems). Inconsistent data would compromise the system's ability to provide meaningful insights and accurate reporting.

Resources Required

The Resources Required will be developed using Visual Studio Code, XAMPP, PHP with Codeigniter 4 Framework, HTML, CSS with Bootstrap, MYSQL, JavaScript and Web hosting with the goal of creating a web-based research management repository system with data analytics.

Therefore, these are the tools that will be used for the development of the system. The team carefully evaluated each best option on their own and carefully worked out which instruments would work best together.

Assumption and Risks

Several assumptions and risks must be taken into consideration when developing the Web-Based Research Management Repository System with Data Analytics for the Philippine State College of Aeronautics. The availability of the required resources, such as web development tools, cloud hosting, and training facilities, is one of the key assumptions. It is also expected that internet access will be dependable for the duration of the project and that all stakeholders, faculty, administrators, and students will actively participate in the system's deployment. These assumptions aid in project scheduling, cost estimation, and resource allocation.

However, several dangers could affect the final result of the project. Potential delays in obtaining the required technology are a major concern that might hinder growth. Such delays have a moderate chance of happening and, if they do, will have a significant effect on the project's timeframe. Another danger is user resistance to change, especially from staff or professors who might feel uneasy implementing a new system. This could lead to poor engagement, which would reduce the system's use. Technical problems that arise during system implementation may also result in data loss or downtime, which could have a detrimental impact on research efforts.

Constraints include limited financial and technological resources, as well as time constraints imposed by the academic calendar. There are also dependencies on external vendors for cloud services and internet infrastructure and on internal IT staff for system development and support.

The project's impact on the organization is expected to be transformative, streamlining the research management process and enabling efficient data analytics for research evaluation. However, the impact also depends on the success of user training and the integration of the system with existing tools. Outstanding issues that require attention include finalizing vendor contracts for cloud hosting and ensuring that the system is scalable for future needs. Addressing these assumptions and risks will be crucial to the project’s successful implementation.