COE 356 SOFTWARE ENGINEERING

SEMESTER PROJECT

THE HIVE

PROJECT TITLE:

PAPERLESS DOCUMENT HANDLING SYSTEM

JUNE 2021

THE HIVE
DEPARTMENT OF COMPUTER ENGINEERING, COLLEGE OF ENGINEERING
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

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ABSTRACT

This study was pursued in order to examine the nature of document handling system used by the various stakeholders in the college of engineering, KNUST.

It was revealed after this exercise that the college implements a paper-based system of handling documents. Amongst the challenges that were made known by the various stakeholders who use this system are; delay in processing documents, difficulty tracking the progress of documents as they are processed, difficulty searching for old documents in archives, unavailability of people whose signatures are required (secondary stakeholders), difficulty restoring lost documents, high cost of printing, difficulty keeping old documents in relation to space etc.

Also, it was also made known by the primary stakeholders that this unfavorable system has greatly affected their output.

Finally, it was proposed that a more modernized and effective system of handling documents such as a mobile application, a web application, a desktop application or any combination of these solutions in the college would greatly improve the stakeholders experience and in all increase their efficiency with ease.

INTRODUCTION

In order to equip students with all the necessary skills, ideas, capacity, knowledge and experience needed to fit into the industry, COE 356 INTRODUCTION TO SOFTWARE ENGINEERING was designed to assist students achieve that by encouraging them to participate in group projects.

THE HIVE decided to research into the current system of handling documents in the college and address its challenges.

PROBLEM IDENTIFICATION

After the research, where stakeholders were engaged in mostly verbal communications, the drawbacks of their current system of handling documents were revealed and was made known with much concern to the team, the sad challenges associated with it.

It was then decided by the team to design and build a system that better suits the needs of its users and addresses their challenges. Thus, a paperless document handling system.

AIMS AND OBJECTIVES

The aims and objectives to achieve at the end of this project are as follows:

- To examine the cause of the poor document handling system in the college
- To demonstrate that there are other improved systems for handling documents
- To upgrade or improve the current system of handling documents
- To minimize or if possible, eliminate the frustrations of stakeholders in processing documents.

A BRIEF SUMMARY OF THE REQUIREMENT ENGINEERING PROCESS

STAKEHOLDERS

Primary stakeholders:

- Departmental Association executives
- Departmental General Secretaries
- Departmental Presidents

Secondary stakeholders:

- Patrons of various departmental associations
- Head Of Departments (HODs) of various departments
- College Registrar
- Student Affairs

SAMPLE QUESTIONS ASKED

Primary Questions

1. How do you handle documents as executives in general?
2. Could you describe your document processing channel to us?
3. How often are your stakeholders available for approval of your documents?
4. What are some the challenges you face?
5. Have you had any incidence of misplaced documents?
6. How does that affect you?
7. Have you considered the possibility of doing this in a much better way?
8. What are your suggestions?
9. If there was a better way to accomplish your task, would prefer that?
10. How would you have preferred it to be? A mobile, web or desktop application or any combinations?
11. What special requirements or functionalities would you have preferred?

Secondary Questions

1. How do you handle the processing of documents in your office?
2. Could you describe your document processing channel to us?
3. What are some the challenges you face?
4. Have you had any incidence of misplaced or overlooked documents?
5. Have you considered the possibility of doing this in a much better way?
6. What are your suggestions?
7. If there was a better way to accomplish your task, would prefer that?
8. How would you have preferred it to be? A mobile, web or desktop application or any combinations?
9. What special requirements or functionalities would you have preferred?

Dr. Eng. Benjamin Kommey (Patron, Lecturer)

1. There is no specific way of handling our documents. You would just be in your office and the secretaries of the association would pass by with their letters for approval.
2. Challenges:
Delay in processing documents
Privacy challenges
No guarantee that it would be accepted
No way of following-up or tracking

Department of Computer Engineering – Dr Isaac Aquah (HOD)

1. Document processing channels
Administrator – HOD – Dean – Dean – Provost / HOD – Dean – Registrar – VC
Procurement: Administrator – HOD – Procurement Office – HOD – Beneficiary – Filed Document
Depending on the type of document, it could take 2 to 3 days.
2. Challenges:
Challenge of storing or keeping paper-based documents.
Delay in processing documents
3. Features:
Proposed a mobile application because he's outside the office a lot.
And also recommended a Desktop Application would also help while in office.
Search
Security and Confidentiality

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Department of Computer Engineering – Miss Awurama (Secretary)

1. Document Processing channel
    Documents go through the administrators before the HOD
2. Challenges:
    Difficulty finding old documents
3. Features:
    Search
    Catalogs / Organized Files
    Desktop App (Working outside office)
    The system should be a compliment of the current system
4. We used Microsoft Teams once but it did not prove effective.

Department of Telecommunication Engineering – Miss Emmy (Secretary)

1. They check the type of document, make copies and process them.
2. Features:
    Validation and authenticity
    Security (Re-login after every launch, pin before approval)
3. Challenges:
    Difficulty finding old documents
4. I would be willing to use such a system but it should be a complement to our current system not to replace it.

Students Affairs – Yusiff (Secretary, 0235818589)

1. Every office has its own way of handling documents. We basically use the paper based system and every letter has its own way of handling it.
2. Some documents may be confidential, others not.
3. Challenges:
    High cost of printing
    Difficulty searching for documents
    Letters being submitted to the wrong people
    Stress in review and corrections (drafting)

Department of Petroleum Engineering – Bernard (Secretary, 0540669387)

1. We use the normal system of processing documents (paper based).
2. We have a system where we track and categorize documents. Example is a tray with three sections, the In, Out and Pending.
3. Challenges:
   Searching for documents in archives
   Documents being misplaced
   Delay in processing documents
   High cost of printing

TELEESA – Adu Gyemfi Kwabena (President, 0544565395)

1. Request for classroom: Patron – HOD – Registrar
   Request for LAB: HOD – DEAN

2. Challenges:
   Delay requesting for items / about 2 to 3 weeks

3. Features:
   Directly forward documents
   Messaging functionality
4. It would be a very good system to patronize

BMESS – Bernard (President, 0558609834)

1. Different communication mediums
2. Challenges:
   Delays
   Getting and Handling Invoices

3. Features:
   A way to contact companies and get invoices
   Recommended companies for item-13
4. It would be a great system as compared to our current system.

CHEESA – Oscar Amponsah (President, 0540590781)

1. Processing some documents takes about 3 days
2. Others take about 2 to 3 weeks especially when DOS is involved
3. Challenges:
   Delay
   Distance and inconvenience
4. This would definitely be a better way to improve our current system of handling documents.

ANALYSIS

At the end of the survey, it was revealed that the following are some of the challenges faced by the primary stakeholders:

- Delay in processing documents
- Postponing or forfeit of some programs on the worst case scenario
- Unreliable availability of secondary stakeholders, especially HODs and Patrons
- Stress in following up the progress of documents
- Difficulty getting invoices
- Uncertainty of documents going to be approved after submission

Also, it was revealed at the end of the survey that amongst the challenges the secondary stakeholders face are:

- Difficulty searching for old documents in archives
- High cost of printing
- Privacy challenges
- Delay in processing documents
- Submission of letters by the students executives to the wrong people
- Stress in drafting and redrafting documents after reviews and corrections

Again, the choice or type of applications preferred by the users were reviewed to be

- Mobile Application
- Desktop Application

The Mobile Application was a response from both stakeholders however, the secondary stakeholders preferred a desktop application as well while emphasizing on its necessity.

In all, the 3 main challenges the primary stake holders face was statistically analyzed as below;