**WEB-BASED DOCUMENT MANAGEMENT AND TRACKING SYSTEM FOR NATIONAL FOOD AUTHORITY**

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**Executive Summary –*The main objective of the study is to develop a system that will improve the current document management of the National Food AuthorityThe focus of the study is to develop and implement a Web Based Document Management and Tracking System for National Food Authority (NFA). The admin staff will manage this system, which has the capability of updating documents, storing, retrieval, sharing and tracking of documents within the organization.The system will store reports and display status for actions. It also has the announcement display where employees can view the announcement posted by the admin. The system can also be used to share particular documents within the departments in the organization. The developers discovered the following after surveying in the NFA, with the increasing number of files in National Food Authority (1) the process of keeping track of the documents is getting harder and more complicated (2) Organizing the files into a folder is not enough (3) the files need to be categorized into a multiple group such as reports, for actions, miscellaneous and others, which is time consuming. On the other hand, the documents need to be the department the organization, which puts so much effort in checking if the documents have been received or the receiver had done any action related to the document. It is time consuming and takes a lot of physical work to go back and forth from one department to another***.

***Keywords: Documents, Document Management, Tracking System, Document Status, Document Sharing, Announcement, Tag Names, Track list***

1. **Introduction**

Document Management and Tracking System focuses primarily on the storage, retrieval and document sharing of self-contained data resources in the document form.

Specifically, the objectives are:

1. To provide an integrated system that will store and allow viewing of documents.
2. To track document status that can be categorized into urgent, priority and regular.
3. To create the sharing of documents.
4. To generate printable documents such as:

4.1 Accounting Reports

4.2 Licensing Reports

4.3 Operation Reports

4.4 Admin Reports

4.5 Engineering Reports

4.6 Technical Services Reports

4.7 NFAEA Reports

4.8 Memoranda

One of the biggest effects that modern technology has on business operations revolves around document automation. It is increasingly used within certain industries to assemble legal documents, contracts and letters. The National Food Authority is one of the government agencies that wants to automate the processing of their documents.

National Food Authority is a government agency that is responsible for ensuring the food security and the stability of supply and price of rice. It was created through Presidential Decree No. 4 dated September 26, 1972, under the name National Grains Authority (NGA) with the mission of promoting the integrated growth and development of the grains industry covering rice, corn, feed grains and other grains like sorghum, mongo, and peanut. It performs functions through various activities and strategies, which include procurement, processing and acquiring updates.

The purpose of the system is to provide a better working system for National Food Authority. The study aims to develop a Web-based Document Management and Tracking System that will reduce the physical handling of documents inside the organization.In most basic sense, the featured system is designed to handle the document management process, from acquiring data, gathering information needed to the approval and distribution of the document. Documents are routed through different departments.

For the Administrative staff, he is capable of creating status list, add new tag names, add employee, and add new department. They do not have to print bunch of paper documents just to distribute to their secretaries. The first document will be coming from the admin department, which will be distributed by the secretary, and to the employees who are involved. Also they can add a particular user by department.

For the secretaries, they can easily distribute and track the documents from the admin department.

For the users or the employees, they do not have to waste so much time searching for documents in a cabinet or drawer. In addition, they can be easily notified whenever they receive new documents.

A Web-based Document Management System developed by Sengol Mary J and Usha S (2015), revolves around a centralized repository that is used to manage the storage of any type of information that could be value to an organization, and protect the same against loss. As content stored within a DMS is typically self-contained, a well-designed document management system promotes finding and sharing of information. Also, based on the developed system the first step in the document lifecycle that kicks off the document management workflow is the creation of documents. The operations performed are creation, editing, review, approval, publishing, distribution and reading. Each phase of the process is performed by a person in a specific role with distinct access to and responsibility for a document. It is important to understand these roles and what each can do in the system.The system adopts the document process and document management workflow of the previous system, the current system is related to the developed system in terms of operations like creation, editing and viewing of documents. Also, it has a similarity when it comes to distinct person who is accessing the documents.

A Document Management System developed by Zhang Deng-Hong and Liang Xiao-Hong (2010), was developed to adopt the mode of user grading management to provide different resources to different levels of customer. It is a kind of network resources sharing mechanism. The Document Management System includes two kinds of service: user management and resources sharing. Resources sharing can be divided into uploading, downloading and deleting. It is mainly used for providing the resources sharing. Documents can only be shared to be accessed, including uploading, downloading and deleting in its level. The system brings out a management method of centralization and multi-user processing. It offers a simple and effective tool for document management. If expanded, such as, it can provide higher data sharing performance for document sharing and higher efficiency of document management.

The concept of the study helped the developers to improve and understand document sharing. While in terms of providing all kinds of supporting documents format, pictures and media files, the current system can also process user defined formatting documents. The current project and the developed system can only be shared to be accessed.

A Web Article Document Management System (2011), explained that the fundamental point of document sharing is that the document carries information in a format so that it could be shared, disseminated, stored and acted upon. The current situation in the construction industry is that a mixture of different generation methods is used for managing documents. Hardly any documents are today produced by hand, but a lot are still transferred by printing them out and sending them to the other parties by mail or couriers.

The article is related to the current problems of the National Food Authority, which is the traditional method of processing and storing data. Many of the government agencies like National Food Authority still use this kind of system. It is difficult for them to provide an ad-hoc report of the needed documents because of their time consuming and manual processing system.

In the same article, it explained why traditional method of Document Management is a failure. Traditional method of document management is known as passive management of files where documents reside when the user has finished with them. Most users pass by or ignore the organization rules about filing documents with the records center file rooms. Once users have obtained the documents important to their activity, they tend to hoard the information. At most, they will wrap up all the record associated with a project at the conclusion of the activity. There is no value added in request, receipt, and disposition systems for documents in file folders that are not accessible or retrievable.

Moreover, traditional method of document management is paper-based, with the consequent non-traceability, possible loss, information fragmentation and not accessibility of the information.

The article Document Management System by [Mahendra K. Ugale](http://ieeexplore.ieee.org/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.Mahendra%20K.%20Ugale.QT.&newsearch=true), [Shweta J. Patil](http://ieeexplore.ieee.org/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.Shweta%20J.%20Patil.QT.&newsearch=true), and [Vijaya B. Musande](http://ieeexplore.ieee.org/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.Vijaya%20B.%20Musande.QT.&newsearch=true) (2017). Paperless Document Management System is used to eliminate the losses that businesses suffer because of physical paper files and filing systems just like in NFA. This paper addresses some of the technologies that are helping professionals shift toward a paperless business world, a DMS based on organizing digital documents to search and store documents and to reduce paper. Most of the workplaces consist of a variety of documents having a mixture of handwritten and printed text. The detection of such documents is a crucial task for Optical Character Recognition (OCR) developers. This paper describes different steps for processing different documents using scanning, tagging, and indexing for effective data retrieval with OCR and Indexing techniques.

The development of an Electronic Document Management System by Elsa V. Isip (2017), aims to provide an Electronic Document Management System that enhanced the clustering, categorizing, searching and retrieval of documents. The system was developed using Microsoft Visual BASIC 6.0 that was capable of managing documents or text file such as reports like TUP Order, Office Order, Implementing Order, Memorandum Thesis and Dissertation, Faculty Files, Downloaded files (html, pdf, etc.). The study differs in the platform used since the present study developed the DMS using PHP as the scripting language. The system adopted the functions of searching, and retrieval of documents. The current system is related to the developed system in terms of managing documents or text files. The project designs as well as the procedures of the operation and testing of the project were also the same as the current system.

A Thesis Portal with Electronic Document Management System developed by Del Rosario (2016), recommended the use of tag and search. A portal is a system that serves as a centralized place for accessing different resources in the Web. It gathers information from different sources and put it all together in a single system, which can help in accessing information by several users. It provides the users with a single point of content, data, and services. It can be personalized depending on the role of the user in the organization. Electronic document management system helps in managing documents electronically and provides security of information.

The document management module is divided into three modules: storing, indexing and search and retrieval. The storing handles the storage of approved proposal documents, thesis documents, teaser videos, request forms, and other documents uploaded in the digital repository. The indexing handles the encoding of information about the document. It also includes tagging that would be used for easier searching. The search and retrieval module allows the users of the system to search for the thesis documents in different ways and view it.

The system supports the use of tag and search. Moreover, it also adopts the document management module that is divided into three, which is storing, indexing, and search and retrieval from the previous system.

1. **DESIGN AND METHODOLOGY**

**Developmental Model**

Agile development methodology provides opportunities to assess the direction of a project throughout the development lifecycle. By focusing on the repetition of abbreviated work cycles as well as the functional product they yield, agile methodology is described as “iterative” and “incremental.”  In an agile paradigm, every aspect of development, requirements and design, is continually revisited throughout the lifecycle. Development using an agile methodology preserves a product’s critical market relevance and ensures a team’s work does not wind up on a shelf.The researchers chose the agile model for this study. In "The Agile" approach wherein the whole process of system development is divided into separate phases. The Requirements phase, the developers collected information from the National Food Authority’s department heads and employees to determine theprocessing being followed in the organization. After the requirements have been collected, the project plan was produced. In the Design phase, all the data that have been gathered by the developers were processed and at the same time, interfaces were made. As for the Development, the programmers automated each process function. After the system was complete, the Testing phase was conducted on the users. To identify the errors and determine whether the system provided the expected outputs.

**Planning and Requirements Analysis**

In this evaluation phase, the developers observed the traditional way of processing the documents in the National Food Authority that affects their work productivity. Through this method, the developers decided to make a system that will improve the distribution of documents within different departments. The developers also conducted a careful analysis of information gathered from different resources like books, internet and other materials, which helped the developers to design the system.

The system was made for the employees to provide them a more convenient way of sharing, creating, and managing documents with the use of Document Management and Tracking System. Requirements analysis is critical to the success of a development project. Requirements must be actionable, measurable, testable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design. Requirements can be functional and non-functional.

**Functional Requirements:**

This phase contains the functional requirements for the Document Management and Tracking System collected from the users, which have been categorized to support the types of user interactions that the system must have. The developers considered the required needs given by the client to attain the needs of the employees of National Food Authority. A sequence of functions of the developed system are described as follows:

1. **Account**
   1. All the users of the system shall have an account to login.
2. **Login**
   1. The user shall enter a valid username to access the system.
   2. The user shall enter a valid password.
   3. The users shall be able to view their profile information after logging in to the system.
3. **Upload Profile Picture**
   1. The admin head shall be able to upload/change photo of the employees.
4. **Announcement**

4.1 The admin head shall be able to add, delete, and update announcements.

1. **View Documents**
   1. The users shall be able to view the documents related to their departments.
2. **Manage Account**

6.1 The admin head shall be able to manage or add, edit, delete, and update the employee’s information.

1. **View Employees Department**
   1. The admin head shall be able to view a specific department and the employees.
2. **Create Document**
   1. The admin head and secretary shall be able to create a document.
   2. The admin head and secretary shall be able to add documents from a particular source.
   3. The admin head and secretary shall be able to send documents to a particular user.
3. **Create Tag Names**
   1. The admin head shall be able to add/remove tag names in a document.
4. **Create New Status List**

10.1 The admin head shall be able to create new status list. If in case a document’s status on process needs to be changed into urgent from being a regular document, he/she can change it.

1. **Distribute Documents**

11.1 Admin head

11.1.1 The admin head shall be able to distribute documents to his/her secretary.

11.2 Secretary

11.2.1 The secretary shall be able to distribute documents to the employees

1. **Track/Monitor Documents**

12.1 The admin head and secretary shall be able to track/monitor the distributed document within the organization.

1. **Forward/Received Documents**

13.1 The users shall be able to view the forwarded/received documents.

1. **Download Documents**

14.1 The users shall be able to download particular documents they needed if necessary

1. **Change Password**

15.1 The admin head shall be able to change the user’s password if forgotten.

1. **Logout**

16.1The admin head and user shall be able to logout when they are done using the system.

**Testing Phase**

This the phase in the agile methodology that discusses the different testing

techniques used by the developers to assure the quality and completeness of the system.

**Testing**

To validate the system, the developers will gather feedbacks on the user to gather information on how the system worked. It will ensure if the system is user friendly, if functions are working properly, and if the system fulfilled the objectives of the study. The process of developing test cases can also help to find problems in the requirements or design of the system. Also, the system can only be accessed within the National Food Authority’s Organization.

The system went through alpha testing. Alpha testing is one of the most common software testing strategy used in software development. Its specially used by product development organizations. The developers observed the users and noted problems. Alpha testing is testing of an application when the development is about to complete. This was the final testing before the software is released to the NFA. It has two phases; the first phase was software being tested by the in-house developers. They used debugger software, the goal was to catch bugs quickly while the second phase was the software being handed over to the software QA staff, for additional testing in an environment that is similar to the intended use.

Alpha testing is simulated or actual operational testing by the NFA employees. Alpha testing is often employed for off-the-shelf software as a form of internal acceptance testing, before the software goes to beta testing.

1. **Results and Discussion**

Table 1 shows the test case for the tracking of the documents.

**Table 1**

**Document Tracking**

|  |  |  |  |
| --- | --- | --- | --- |
| **Steps** | **Expected Results** | **Actual Results** | **Status** |
| If the admin choose to whom he will send the documents | The name of the receiver will be displayed | The name of the receiver was displayed | Passed |
| If the user sends the documents to the next receiver | It will display the time when the receiver receives the documents | The time when the receiver receives the documents was displayed | Passed |
| If the user sends the documents to the other Department | The Department of the receiver will be displayed | The Department of the receiver was displayed | Passed |
| When the receiver opens the documents that he/she received | The time when the receiver opened the documents will be displayed | The time when the receiver opened the document was displayed | Passed |
| If the receiver forwarded the documents to the next employee | It will display the name of the next receiver of the documents | The name of the next receiver was displayed | Passed |
| If the current holder of the documents sends the documents to the next receiver | The time when he/she sends the documents will be display | The time when he/she sends the documents was displayed | Passed |
| If the user sends it to the other Department | The Department of the next receiver will be displayed | The Department of the next receiver was displayed | Passed |

**Conclusion**

Based on the findings, the following conclusions are hereby presented:

1. Providing an integrated system that store and allow viewing of documents.
2. Track necessary document throughout the process.
3. Sharing of documents between the users.
4. Generating printable documents such as Accounting Reports, Licensing Reports, Operation Reports, Admin Reports, Engineering Reports, Technical Services Reports, NFAEA Reports and Memoranda.

**Recommendations**

For furtherance, the developers recommend the following:

1. To include other branches or provinces of National Food Authority in the system to promote easier and faster sharing and tracking of documents.
2. To add feature such as the e-signature which can provide easier and faster way of signing the documents without printing the documents needed to be signed.
3. To make the system online for the employees to access the system even if they are not at work and needed documents immediately.
4. To add more types of documents in the system in order to provide a system which is capable of sharing and tracking more documents in just one system.

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