Digital Repository System Development and Evaluation

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Abstract: *Digital Repository is the new way of safekeeping the records of every institution. It helped the sustainability of the files from different factors of damage. This study applied the RAD model for software development with the combination of PHP and MySQL. With the application of the ISO 9126 standard, the system evaluated its usability of 4.30, functionality of 4.03, and maintainability of 4.50. These values proved the application of the system helps to monitor and facilitate the record-keeping of the government institution. Thus, it provides significant help in storing, managing, and providing best practices among government offices*

Keywords: Data Report, Performance Evaluation, Repository System

I. INTRODUCTION

Government institutions have been gradually resorting to innovative solutions to streamline their operations and improve the delivery of public services in an era characterized by rapid technological breakthroughs and the growing emphasis on openness, accountability, and knowledge sharing [1]. The creation and assessment of a Digital Repository System, a powerful tool that not only promotes the transmission of information but also acts as a dynamic platform for presenting the best practices and initiatives carried out by local government units, is one such crucial breakthrough [2].Local Government Unit is one of the providers of timely and accurate information. Some of its branches still usethe traditional approach in archiving records making it difficult for releasing necessary documents on time. Due to the manual approach, delays in giving information as to needs of its requirement and clientele were affected specifically for periodic evaluation of offices. Thus, this study developed a digital repository that can be applied to improve the existing system to support the quality assurance initiatives of the local government unit.

The significance of creating a Digital Repository System tailored to the needs of government institutions [3]. By harnessing the power of digitalization, such a system provides a centralized repository where governmental achievements, innovative strategies, and successful projects can be documented, preserved, and made easily accessible to various stakeholders, including policymakers, citizens, and fellow governmental bodies [4].Effective data management is one of the most important considerations for high-quality information [5] [6]. Numerous platforms and technologies are now available for software development that can be applied to data sharing. Although there were issues as to data privacy there is still a need for an effective digital repository development.

The goal of this study was summarized as follows:

- To develop and implement a digital repository system; and
- To evaluate the system based on ISO 9126 standards as to its usability, functionality, and maintainability.

II. METHODOLOGY

2.1 Hardware and Software

Hardware and software components must be carefully taken into account while developing a reliable digital repository system. The technology chosen should be compatible with the system's scalability needs, security requirements, and the stakeholders' desired user experience. Hardware requirements for the development are Intel I5, 8 GB RAM, with a minimum of 500 GB of storage. The development tools were Php Programming language with the integration of MySQL for the database.

2.2 Data Gathering

The success of a digital repository system hinges on the quality, diversity, and relevance of the data it contains. Effective data gathering is a fundamental step in creating a repository that serves its intended purpose of archiving, sharing, and promoting valuable content. A comprehensive data-gathering procedure tailored to the specific needs of a digital repository system. The data needed were obtained from the local government unit of the municipality of Del Carmen. Office staff and head of offices were interviewed based on the process and necessary information requirements. By carefully selecting, validating, and organizing data, the repository becomes a valuable resource for information sharing, collaboration, and promoting best practices across different applications

2.3 Evaluation Process

The study employed a survey method and a descriptive research methodology. Through the use of a chosen instrument, the data required for system evaluation were acquired. The information was taken from ISO 9126 and John Brooke (1986). The information about the employee's personal information was covered in Part I. The items that would affect the system's usability, functionality, maintainability, and effectiveness were the emphasis of Part II. The proponent went through the stages of establishing the validity of the instrument to make sure that it meets the goals of the study.

TABLE I: Distribution of respondents

Respondents	N	Percentage
Office Clerks	23	77%
Office Heads	7	23%
Total	30	100%

III. RESULTS AND DISCUSSION

3.1 System Presentation

Fig. 1 illustrates the system interface. It shows from the creation of accounts up to the different transactions of the digital repository system.
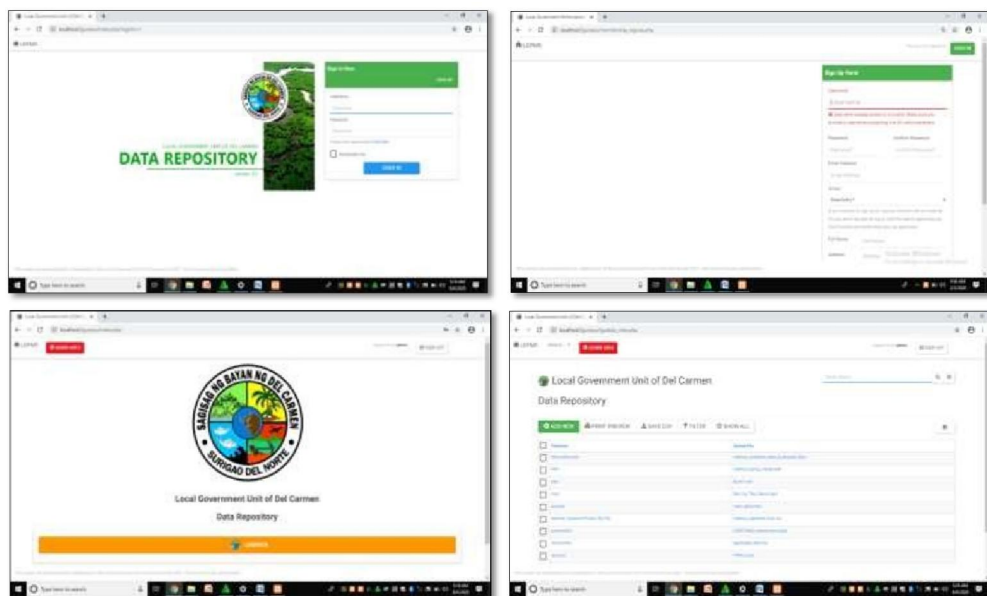

Fig. 1. Sample images of user interface of the system

3.2 System Evaluation

Fig. 2 presents the result after evaluating the system in terms of its usability. Plotting the user's rating, the mean usability scores 4.2, having an indicative meaning of "Strongly Agree". This implied that the respondents were satisfied to the performance of the system.
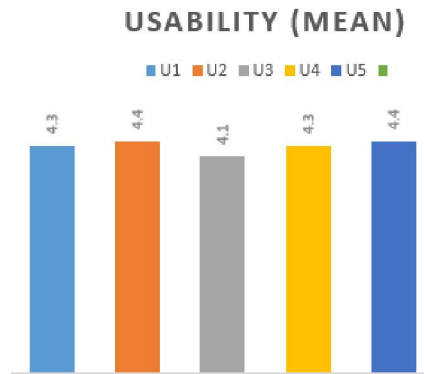
Fig. 2. Usability of the system

The functionality of the system was shown in Fig. 3. The respondents rated the system's functions a mean rating of 4.0 indicating a "Strongly Agree". Respondents gave "Agree" a mean score of 4.0 when asked whether the function and commands are ever corrected.
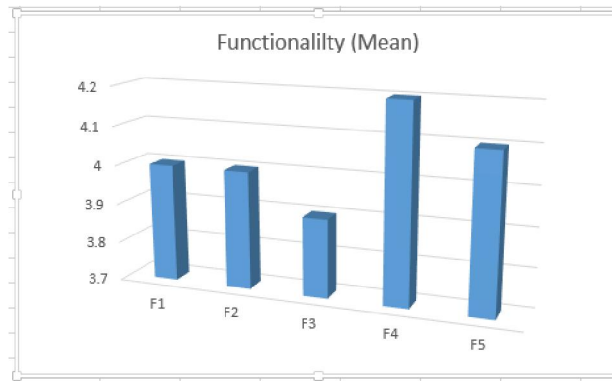

Fig. 3. Functionality of the system.

Fig. 4 showed how maintainable the software is. When asked to grade the system's ability to pinpoint the source of a software problem, respondents marked it a "Strongly agree" rating, with a mean score of 4.5. A mean rating of 4.3 was recorded, indicating a response of "Strongly Agree" when asked if the mobile application can sustain updates to verify (test) a system modification. A mean score of 4.4 was obtained, which denotes a "Strongly Agree" answer, given the context that the system may save documents and/or data updates. A mean score of 4.7 was recorded, with the verbal description scored as "Strongly Agree" in the context that the system has the resources to store enormous amounts of data.A mean score of 4.6 with a verbal description of "Strongly Agree" was discovered in the context that the system has the potential of speed to execute the procedure. The respondent verbally described the overall maintainability average as "Strongly Agree" (4.5).
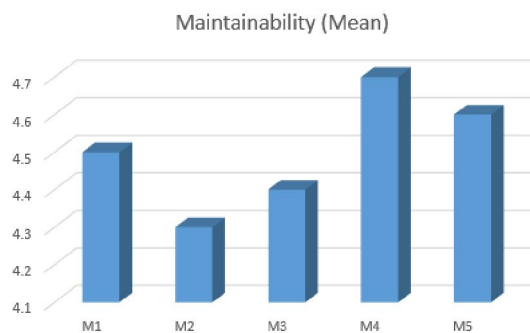

Fig. 4. Maintainability of the system.

3.3 Summary of Evaluation

The overall system evaluation in terms of usability, functionality, and maintainability is displayed in Table II. The average score for usability is 4.3; the verbal summary is "Strongly Agree"; the average score for functionality is 4.04; the verbal summary is "Agree"; and for the overall score, the verbal description "Strongly Agree" was given, and the maintainability mean score is 4.5. The system evaluation's overall average score is 4.28, and the verbal description is "Strongly Agree".

TABLE III: General System Evaluation Result

System Evaluation in Terms of	Mean	Verbal Description
Usability	4.3	Strongly Agree
Functionality	4.04	Agree
Maintainability	4.5	Strongly Agree
Grand Total	4.28	Strongly Agree

IV. CONCLUSION

The LGU Data Repository System gives a user the knowledge necessary to complete any work quickly, effectively, and competently based on the findings of the study. The system's components function properly and deliver accurate information about each user's actions in a format that is most suitable for that user. The created system is adaptive to new or altered information requirements and may show real-time archived data as needed. It is therefore easier to implement and more useful. Each module satisfies the requirements of the different offices.

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