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RESEARCH ARTICLE

WEBSITE DEVELOPMENT OF LOCAL GOVERNMENT UNIT OF SALCEDO, EASTERN SAMAR

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ABSTRACT

The researchers came up to an idea in developing an official website for the Local Government Unit of Salcedo in order to link with the people who seek information about the Local Government Unit, its citizens, investors and stakeholders around the world via the internet. Different processes were undertaken to achieve the objectives of the study. First, was the designing of the System. This takes place upon conceptualization of data gathered from the respondents of the study. The data serves as the basis upon designing the flow of the system which was represented by the system flowcharts. After designing the system, the development of the system followed using Joomla 1.5 version as a tool utilized in developing the system. Creating interface design and other features were undertaken in this phase. Encoding the system followed after the interface design to ensure the system's functionality. Evaluation of the website followed after its development to get an idea on how far the website attained. From the evaluation of the developers, the website got an overall mean score of 4.30 and was interpreted as excellent, the experts rated the website and got an overall mean score of 4.31 and was interpreted as excellent and the last evaluation from the heads of the different offices of LGU Salcedo got an overall mean score of 4.48 and was interpreted as excellent. From the evaluation, the researchers concluded that the website was technically and operationally effective. The researchers came up also the following recommendations:the website should be implemented by LGU Salcedo;trainings for the LGU personnel should undergo training on the use of the website and further studies must be conducted in order to add more details not specified in the website and to further enhance its structure.

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INTRODUCTION

Life nowadays is impossible without technology. Modern inventions make life easier. Most of the people, especially professionals and students are using every single piece of modern technology. One of these modern technologies is what they called "Internet". Salcedo is a fifth class municipality in the province of Eastern Samar, Philippines. According to the 2010 census, it has a population of 19,970 people in 4,199 households. Salcedo is politically subdivided into 41 barangays with 13 poblacion barangays. Administrative Order No. 39 mandating all government agencies to migrate to the Government Web Hosting Services (GWHS) of Department of Science and Technology - Information and Communications Technology Office (DOST – ICTO) was the primary reason why the researchers developed this system. Moreover, this system is also intended to disseminate the information not only for local government unit but as well as to all Salcedonhon in town and even those living in Manila and outside the country for transparency as part of Pinoy's key result area.

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Objectives of the Study

This study aimed to design, develop and test a Local Government Unit of Salcedo, Eastern Samar website and to ensure the usability of the developed system

MATERIALS AND METHODS

Research Design

The researchers used two methods in conducting the study which were the survey method and product development method. In the survey method, the researchers utilized the survey questionnaire in collecting the data and information needed in the study. This was given to the individuals who have a direct access on the information to use in developing the website. The survey questionnaire served as the research instrument because it provided an exact and appropriate data that definitely assisted in the completion of the study. In the product development, it involves the designing, developing and testing of the system. Through the gathered data the researchers identified the input for the system and the process

used in developing the system. Testing of the system undergone a series of tests in order to determine the overall performance of the system.

Research Locale

The survey was conducted at the different offices of Local Government Unit of Salcedo. It is located at Barangay No. 03 and Barangay No. 04, Poblacion Salcedo, Eastern Samar. The product development was conducted at the College of Information and Communication Technology, Salcedo-Campus, Salcedo Eastern Samar.

Respondents of the Study

For the survey, the respondents of the study were the department heads working in the different offices of Local Government Unit of Salcedo Eastern Samar. For the product development, the respondents were all 4th year Computer Science students and all CICT faculty handling major computer science subjects.

Sampling Procedure

The researchers used a non-random survey procedure in selecting the respondents of the study. For the Benchmark test, the developers themselves evaluated the system. For Alpha test, the respondents were the faculty members of the College of Information & Communication Technology and for the Beta test, the respondents were the different department heads of the LGU Salcedo. This tests were done to determine the quality and efficiency of the website. The score card used was adopted from McCall (1990).

Instrumentation

The researchers used the survey questionnaire to gather the important information regarding LGU Salcedo which was needed in the study. The score cards will be used to evaluate the system as to its maintainability, flexibility, testability, portability, reusability, interoperability, correctness, reliability, efficiency, integrity and usability.

Data Gathering Procedure

The researchers used a survey questionnaire to gather data. It was distributed to the respondents and was collected immediately after answering. The data gathering was done on the first week of August 2014, at the Municipality of Salcedo, Eastern Samar. The system was rated using McCall's score card which is divided into three categories: product revision, product transition and product operation. Product revision measures maintainability, flexibility and testability; product transition determines portability, reusability and interoperability while product operation assesses correctness, reliability, efficiency and integrity of the system. The researchers adopted the following statistical interpretation based on the same statistical representations used by Brigham (1901) from North-Eastern United State, one of the psychologists who worked in the Army Alpha and Beta:

Mean Score RangeQualitative Description

4.2 - 5.0 Excellent
3.4 - 4.1 Very Good
2.6 - 3.3 Good
1.8 - 2.5 Fair
1.0 - 1.7 Poor

PROCEDURE

Designing the System

The official website of Local Government Unit of Salcedo, Eastern Samar was designed after gathering all the necessary information needed. It made up the systems interface, database and system flow chart of the system. The system was designed using Joomla, a content management system which helped the researchers in designing the website. After data gathering, creating flowcharts, database and table relations, creating the interfaces, menus and submenus followed. Designing the system started on the 2nd week until the 3rd week of September 2014.

Developing the System

After designing the system, the development of the system followed. This was done between the month of October and November 2014. The researchers used access codes in order to identify the user and to maintain the security of the system. The researchers also developed different interfaces for the different services offered.

Testing the System

After developing the website the last phase was testing the developed website. Testing the website undergone three stages. The Benchmark test wherein the researchers were the one who evaluated the system, and was done on the 1st week of December 2014; the second phase is the Pilot test which was divided into two tests – Alpha and Beta Tests. For the Alpha test, all College of ICT faculty rated the system considering that they already possess knowledge and skills in developing similar systems on the 2nd week of December 2014 and for the Beta test, different heads of the offices from LGU Salcedo rated and evaluated the developed system during the 3rd week of December 2014. They will use McCall's score card to measure product operation (maintainability, flexibility, testability), product revision (portability, reusability, interoperability), and product operation (correctness, reliability, efficiency, integrity).

RESULTS AND DISCUSSION

Results in Designing and Developing the Website

The website was designed during the first week of September until the first week of November 2012 at ESSU – Salcedo Campus. In designing the web application, the researchers used Joomla 1.5 version, a free and open source content management system (CMS) for publishing content on the world wide web and Xampp, a free and open source cross-platform web server solution stack package, It has Mysql which comprised the database of the system that served as the storage of data exchange. The database holds username and password. Adobe Photoshop was also used to enhance the design and the images of the website. The interaction of these programs enables dynamic web pages. The researchers identified the needed information that is in the website. After identifying the information, collection of the data through an

interview from selected employees of the different offices of the municipality of Salcedo was done. The questions included the functions of every office and their services offered. The researchers also captured photos to be used in the study.

Results in Testing the Website

The Official Website of the Local Government Unit of Salcedo, Eastern Samar was evaluated by the evaluators in order for the researchers to estimate on how far the website reaches. The system had undergone a series of tests to determine the website performance. This helped the researchers to determine errors and lapses of the system that may led to a more negative results. The first test that was conducted was the Benchmark Test followed by the Pilot Test which includes the Alpha and Beta Tests. This was conducted during the first week of December 2014. The system was evaluated using McCall's Quality Model to identify errors and lapses.

Benchmark Test on the Quality Attributes of the Local Government Unit of Salcedo, Eastern Samar Website

Benchmark Test Summary: Table 1 presents the summary result of product revision, product transition, and product operation quality attribute during the benchmark test of the LGU Salcedo Website. They rated the entire LGU Salcedo Website. In the criteria "Product Revision" the system obtained a mean value of 4.33 and was interpreted as excellent. In the criteria "Product Transition" the system obtained a mean value of 4.17 and was interpreted as very good. Lastly, "Product Operation" obtained the mean value of 4.40 and was interpreted as excellent. The grand mean obtained of the product transition quality attribute of the system was 4.30 and interpreted as excellent.

Table 1. The Summary of Overall Quality Attributes of the System as Perceived by the Researchers during the Benchmark Test

Criteria	Weighted Mean	Interpretation
Product Revision	4.33	Excellent
Product Transition	4.17	Very Good
Product Operation	4.40	Excellent
Grand Mean	4.30	Excellent

Alpha Test on the Quality Attributes of the Local Government Unit of Salcedo, Eastern Samar Website

Alpha Test Summary: Table 2 presents the summary result of product revision, product transition, and product operation quality attribute during the Alpha Test of the LGU Salcedo Website. They rated the LGU Salcedo Website. In the criteria "Product Revision" the system obtained a mean value of 4.16 and was interpreted as very good. "Product Transition" obtained a mean value of 4.48 and was interpreted as excellent. Lastly, "Product Operation" obtained the mean value of 4.18 and was interpreted as very good. The grand mean obtained of the product transition quality attribute of the system was 4.27 and interpreted as excellent.

Beta Test on the Quality Attributes of the Local Government Unit of Salcedo, Eastern Samar Website.

Beta Test Summary: Table 3 presents the summary result for the beta test. In the criteria "Product Revision," the system obtained a mean value of 4.42 and was interpreted as very good. "Product Transition" obtained a mean value of 4.33 and was interpreted as very good. Lastly, "Product Operation," obtained the mean value of 4.70 and was interpreted as very good. The grand mean obtained was 4.48 and was interpreted as excellent

Table 2. The Summary of Overall Quality Attributes of the System as Perceived by College of ICT Faculty during the Alpha Test

Criteria	Weighted Mean	Interpretation
Product Revision	4.16	Very Good
Product Transition	4.60	Excellent
Product Operation	4.18	Very Good
Grand Mean	4.31	Excellent

Table 3. The summary of overall quality attributes of the system as perceived by the heads of different offices of LGU Salcedo during the Beta test

Criteria	Weighted Mean	Interpretation
Product Revision	4.42	Excellent
Product Transition	4.33	Excellent
Product Operation	4.70	Excellent
Grand Mean	**4.48**	**Excellent**

Table 4. The Summary of Overall Quality Attributes of the System as Perceived by the Heads of Different Offices of LGU Salcedo during the Usability Test

Criteria	Weighted Mean	Interpretation
The web pages loaded in an acceptable time frame	4.34	Excellent
The web site was visually appealing	4.55	Excellent
The navigation was clear and made it easy to find information	4.45	Excellent
The graphics were used to convey pertinent information	4.80	Excellent
I found what I was looking for on this web site	4.34	Excellent
My experience with this system was successful	4.67	Excellent
Grand Mean	4.53	Excellent

Usability of the Local Government Unit of Salcedo, Eastern Samar Website

Table 4 presents the summary result for the usability test. The grand mean obtained was 4.53 and was interpreted as excellent which is the basis that the developed website is already ready for deployment.

Summary

The study aimed to design, develop and test an official website of local government unit of Salcedo, Eastern Samar. Joomla 1.5 version was used in designing the web pages while the other components such as phocagallery, ninja board and jce were used for the enhancement of the website. The researchers also used Adobe Photoshop for the image enhancement. The official website was used to disseminate information as well as promoting tourism developments in the municipality of Salcedo, Eastern Samar. The website was developed by the researchers in order to link the people who seek information about the Local Government Unit of Salcedo, so that they can

act upon with its citizens, investors and stakeholders. Evaluation of the website followed after its development to get an idea on how far the website attained. From the evaluation of the developers, the website got an overall mean score of 4.30 and was interpreted as excellent, the experts rated the website and got an overall mean score of 4.31 and was interpreted as excellent and the last evaluation from the heads of the different offices of LGU Salcedo got an overall mean score of 4.48 and was interpreted as excellent. From the evaluation, the researchers concluded that the website was technically and operationally effective.

Conclusion

After a series of system modifications, the following conclusions were made:

1. The researchers designed and developed an efficiently Official Website of Local Government Unit in Salcedo, Eastern Samar.
2. The developed website will help the Local Government Unit of Salcedo, Eastern Samar advertise their most loved hometown to be proud of.
3. Acceptance tests of the website done by the developers, Instructors/ Experts, and the Employees of Local Government Unit of Salcedo, Eastern Samar and give informative contents about Salcedo.

Recommendation

In the light of the findings and conclusion drawn, the following recommendation was made:

1. The website should be implemented by LGU Salcedo
2. Trainings for the LGU personnel should undergo training on the use of the website.
3. Further studies must be conducted in order to add more details not specified in the website and to further enhance its structure.

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