

DEPARTMENT OF SCIENCE AND TECHNOLOGY IV-A QUALITY MANAGEMENT
INFORMATION SYSTEM

SPECIAL PROBLEM

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE

SUBMITTED TO

THE FACULTY OF THE INSTITUTE OF COMPUTER SCIENCE
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ABSTRACT

The DOST IV-A Quality Management Information System is a web application that aims to enable data transparency in the regional office. Authorized users can add, view and update on the entries to Customer Satisfaction Measurement, Management Review and Quality Management System Documentation Modules. Users can view the graphical data about the satisfaction rating of a functional unit. Users can generate a report on the satisfaction rating of all the functional units. Authorized users can download relevant documents from the modules. The developer conducted a user survey for the measurement of systems functionalities and usability.

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CHAPTER I

INTRODUCTION

A. Background of the Study

Cost-efficient technologies such as microcomputers, telecommunication technologies, and information systems are vital elements in a developing country. Information systems for governance and public administration is one of the top priorities of every developing country, as it is one of the best applications of modern technology. Governance and public administration is more productive, effective and efficient through the help of modern technology (Government Information Systems, 1995).

Information technology is being used by different organizations in planning the activities of the whole organization, more accurate decision making, and safekeeping of important records and automation of complex repetitive task which can streamline processes inside the office and reduce the time needed to complete the task significantly boosting efficiency and productivity of the whole organization (O'Brien and Marakas 2010; Olson, 1982).

In the case of the DOST IV-A regional office they see the need to create an information system that can help the top management to plan the objectives and goals of the organization, a system that can aid in the decision making process of the organization, and lastly, a system that automates complex task such as analysis and presentation of customer satisfaction to reduce some workload of their employees.

B. Statement of the Problem

The management of DOST IV-A regional office wanted to improve their efficiency in measuring customer satisfaction, documenting the meetings held within the organization, and

management of information resources for effective decision making. They requested a system that can measure and analyze customer satisfaction and can track all the meetings held within the regional office and documentation of their Quality Manual.

C. Significance of the Study

The Quality Management Information System will provide a faster way of measuring and analyzing customer satisfaction. It will provide a database of all the meetings held within the office, its agenda and action plan, for easier retrieval of information. Lastly, it will store the quality manual of the regional office to facilitate faster retrieval of the rules and policies concerning the quality of the services they offer.

D. Objectives of the Study

The general objective of the study is to develop a web application that can be used by the DOST IV-A regional office in making decisions . The following are the specific objectives that this study aims to achieve:

1. To develop a module that can measure and generate a report on the customer satisfaction for each functional unit of the regional office.
2. To develop a module that will track all the meetings held within the regional office. Each entry in the module contains the agenda, action plan, minutes of the meeting, presentation slides and other relevant documents.
3. To develop a module that will search the quality manual and return relevant information based on the input given by the user.
4. To develop a system that is deemed usable by the System Usability Scale

E. Scope and Limitations

The system is specifically created to be used by the DOST IV-A regional office only. The functionality and specification were provided by the office, and confidential data are provided. User testing and surveys will be conducted in order to measure the systems functionality and usability.

CHAPTER II

REVIEW OF RELATED LITERATURE

Several studies have been conducted on the effects of utilizing new technologies in the processes of institutions and organizations, specifically in the field of information technology. World leaders recognize the value of technology to support the growth of their own country and to satisfy the demands of their citizens.

Electronic government commonly known as e-government is a widely used term that means the use of information technology in government agencies to provide a very good quality service to the clients (Sudan, 2005). Electronic government promotes greater transparency and accountability in government agencies (Pasco, 2015). In 2005, World Bank reported that information technology changed the way how the government works through office automation and through the development of web-based applications that can improve efficiency and transparency of government offices (World Bank, 2005).

In 1997, the South Korean Government replaced their primitive procurement system in their government processes to an automated one because it was widely recognized to be corrupt, complicated and lacking accountability. In 2004, the World Bank Organization showed that the South Korean government greatly benefited in replacing their primitive procurement system, the system that cost 26 million dollars generates savings estimated at 2.5 billion dollars a year (Cho and Byeon, 2004).

In the Philippines there have been people developing systems for the betterment of our government agencies. One of the best examples is the OpenLGU System, an open source enterprise information system for a typical local government unit in the Philippines. It aims to provide automated systems for different transactions or processes in local government units.

In 2014, San Buenaventura created an inventory system module for supplies and materials in local government units in the OpenLGU System (San Buenaventura, N.D.). This application was successful in delivering its primary functions such as requesting for supplies and efficient inventory management. Through this application, errors in managing the inventory of materials were minimized.

According to Marasigan (2015), human errors were successfully minimized through the utilization of modern technology such as automated systems (Marasigan, N.D.). Automated systems make life and work easier not only for organization but also in the different fields of sciences. Nowadays, companies and government institutions such as the Department of Science and Technology have decided to develop these automated systems for the benefit of their employees and customers.

These studies show the importance of replacing old and manual processes inside organizations and institutions, public or private, into automated ones to minimize human error, boost their efficiency, and reduce the cost of operations.

CHAPTER III

METHODOLOGY

A. Functional Requirements

1. Authentication Module: provides authentication for users.
2. Customer Satisfaction Measurement (CSM) module: allows each authorized employee to add, modify, view an entry in the CSM module. It allows authorized user to generate a report on the customer satisfaction of each functional unit. It allows authorized user to generate comparative analysis on the customer satisfaction of each functional unit between different periods of time.
3. Management Review (MR) module: allows each authorized user to add, modify and view an entry in the MR module. Each entry in the module contains information such as: date of the meeting, venue where the meeting was held, meeting agenda and its action plan, minutes of the meeting and an attendance sheet.
4. Quality Management System Documentation (QMSD) module: allows authorized user to add, modify, search and view an entry in the QMSD module. Each entry in the module contains information such as: document code, revision number and subject of the document.
5. User Privileges:
 - Administrator
 - View own profile
 - Update own profile
 - Change own password

- Create accounts for new employees, managers and administrators
- View user accounts
- Update user accounts
- Activate accounts
- Deactivate accounts
- Change password of a user
- Add functional unit
- View functional unit
- Update functional unit
- Add signatory
- View signatory
- Update signatory
- View logs
- Add CSM
- View CSM
- Update CSM
- Generate CSM report
- Add MR
- View MR
- Update MR
- Add QMSD
- View QMSD
- Update QMSD

- Manager
 - Add CSM
 - View CSM
 - Update CSM
 - Generate CSM report
 - Add MR
 - View MR
 - Update MR
 - Add QMSD
 - View QMSD
 - Update QMSD
- Employee
 - View CSM
 - Generate CSM report
 - View MR
 - View QMSD

6. Logs: record all the activities that are happening on the system. Only the administrators can view the logs.

B. Non-Functional Requirements

1. Performance Requirements: The information system should be only accessible through the local server of DOST IV-A regional office. The deployed system should run all its features without errors.]

2. Security Requirements: The only security feature of the system is user authentication which is a combination of username and password. The administrator can create, view, update user accounts. The administrator can change a password of a user account in case the user forgets his/her own password. The administrator can activate or deactivate user accounts. The administrator can view logs.
3. Software Quality: The system has a well documented and readable code.

C. System Requirements

The system requires the following:

- A computer running Windows 8 or Ubuntu 14.04 or better.
- Latest version of Mozilla Firefox or Google Chrome browser.

The following were used for development:

- A computer running Ubuntu 16.04.
- Latest version of Mozilla Firefox and Google Chrome browser.

Tools and libraries to be used in developing the information system:

- MySQL 5.7.24
- Laravel version 5.4.22 (PHP Framework)
- Visual Studio Code

D. Design and Implementation

1. Database: An entity relationship diagram was created for an effective and efficient database.
2. Implementation: A database schema was created and designed for the construction of MySQL database of the system. The system was designed and developed with four main

modules. The first module for the system is the Login module. Separate modules for admin, IPCR and PCD, immediate supervisor and head of office are implemented. The IPCR is intended for users that are permanent employees and immediate supervisors and PCD is for the non-permanent employees.

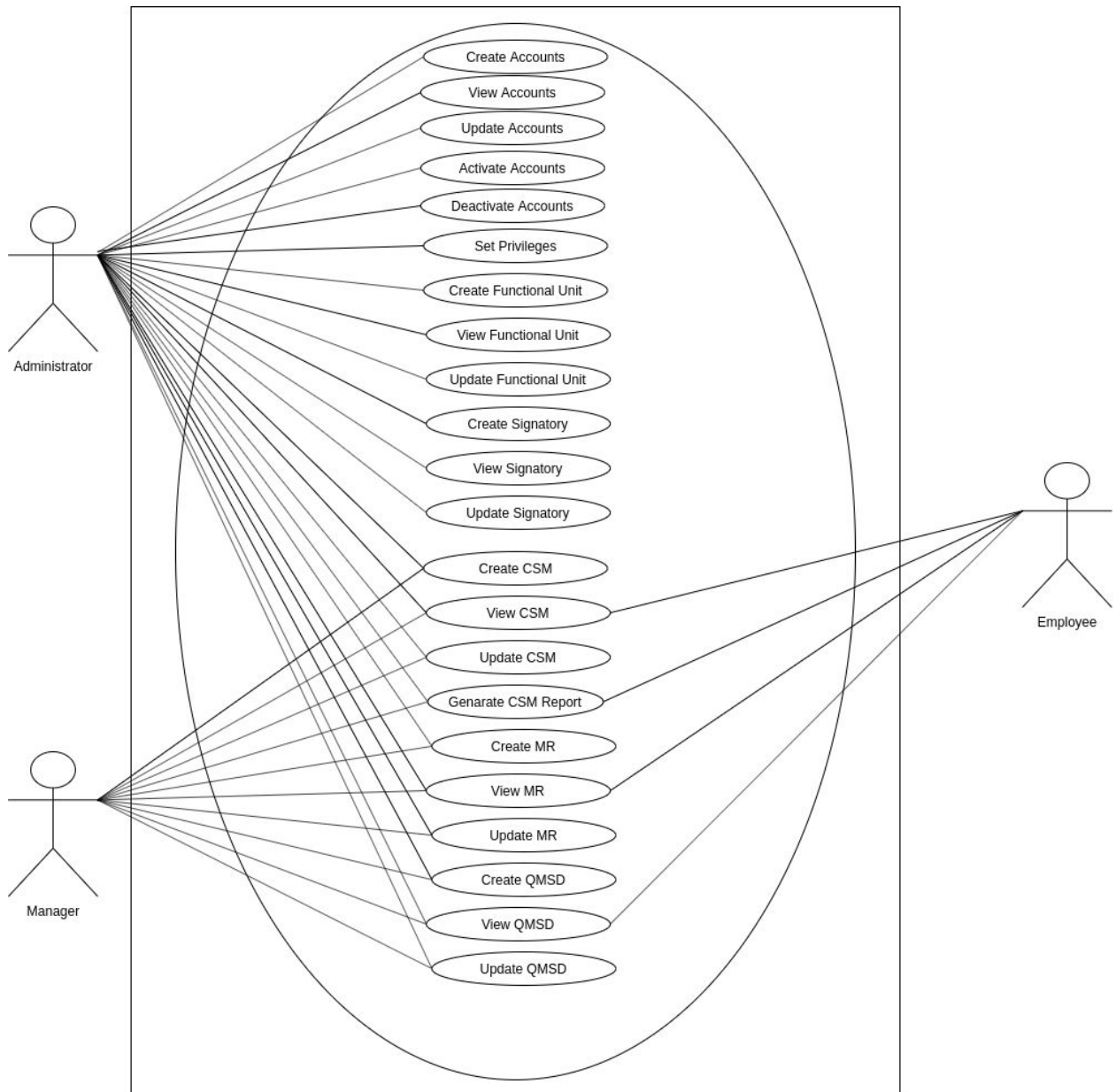


Figure 1: Use Case Diagram

CHAPTER IV

RESULTS AND DISCUSSIONS

The following are the results of the implementation based on the features specified:

A. Login and Homepage

The user will be redirected to a simple homepage after successful authentication. The homepage contains simple descriptions of the functionalities of the three different modules.

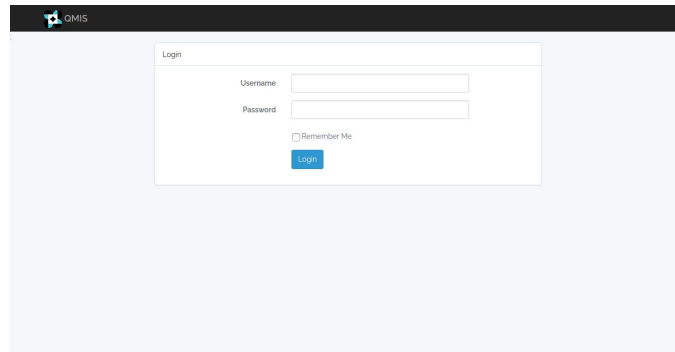


Figure 3: Login Page

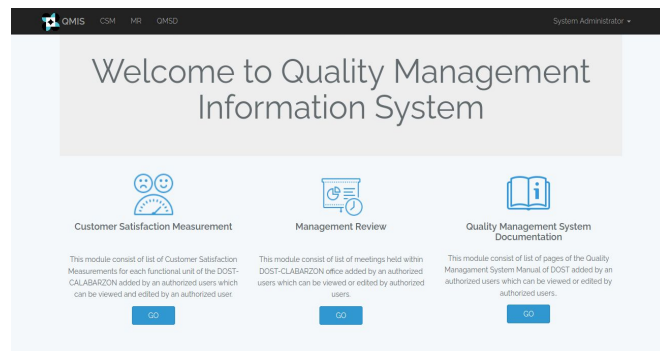


Figure 4: Homepage

B. User Profile

Every user can view and update their own profile. They can also change their own password.

Home / My Profile

System Administrator

[EDIT](#) [CHANGE PASSWORD](#)

Username: admin

Name: System Administrator

Position: System Administrator

Functional Unit: Functional Unit 1

Role: Administrator

Status: Activated Account

PRIVELEGES ON MODULE

	View	Add	Edit
CSM	✓	✓	✓
QOA	✓	✓	✓
MR	✓	✓	✓
QMSD	✓	✓	✓

Figure 5: View Own Profile

Home / My Profile / Edit Profile

Edit System Administrator

[BACK](#)

username: admin

Name: System Administrator

Position: System Administrator

Profile Photo(.jpg): default_1f63256149.jpg [Upload File](#)

[EDIT](#)

Figure 6: Update Own Profile

Home / My Profile / Change Password

Change Password

[BACK](#)

Old Password:

New Password:

Confirm New Password:

[CHANGE PASSWORD](#)

Figure 7: Change Own Password

C. System Management

Only the administrator account can open the System Management Page. The administrator can add a new employee, manager or administrator. The administrator can view and update a user account.

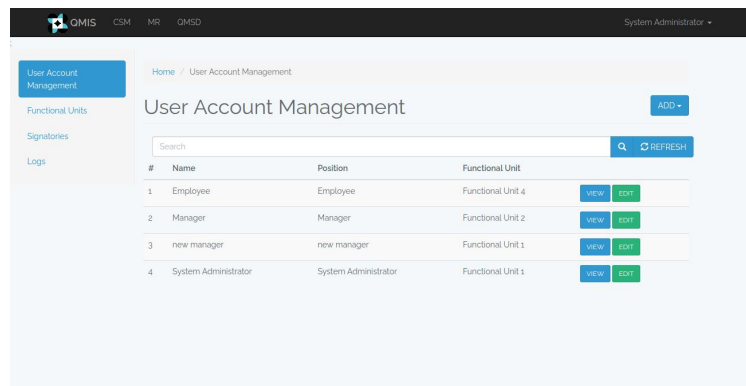


Figure 8: User Accounts Page Index

The screenshot shows the 'Add Administrator' page. The header includes the QMIS logo and navigation links for CSM, MR, and QMSD. The user is logged in as 'System Administrator'. The left sidebar contains links for 'User Account Management', 'Functional Units', 'Signatories', and 'Logs'. The main content area has a breadcrumb trail 'Home / User Account Management / Add Administrator' and a 'BACK' button. The form includes the following fields:

- Name
- Position
- Functional Unit (dropdown menu with text 'Click to select functional unit')
- username
- Password
- Confirm Password
- Profile Photo(jpg)(Optional) with an 'Upload File' button

Below the form is a table titled 'PRIVELEGES ON MODULE' showing permissions for CSM, QOA, MR, and QMSD:

	View	Add	Edit
CSM	✓	✓	✓
QOA	✓	✓	✓
MR	✓	✓	✓
QMSD	✓	✓	✓

An 'ADD' button is located at the bottom right of the page.

Figure 9: Add New Administrator

CSM

MR

QMSD

System Administrator

User Account Management

Functional Units

Signatories

Logs

Home / User Account Management / Add Manager

BACK

Add Manager

Name

Position

Functional Unit

Click to select functional unit

username

Password

Confirm Password

Profile Photo(jpg)(Optional)

Upload File

PRIVELEGES ON MODULE

	View	Add	Edit
Check All	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CSM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GOA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QMSD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ADD

Figure 10: Add New Manager

CSM

MR

QMSD

System Administrator

User Account Management

Functional Units

Signatories

Logs

Home / User Account Management / Add Employee

BACK

Add Employee

Name

Position

Functional Unit

Click to select functional unit

username

Password

Confirm Password

Profile Photo(jpg)(Optional)


Upload File

PRIVELEGES ON MODULE

	View
Check All	<input checked="" type="checkbox"/>
CSM	<input type="checkbox"/>
GOA	<input type="checkbox"/>
MR	<input type="checkbox"/>
QMSD	<input type="checkbox"/>

ADD

Figure 11: Add New Employee


QMIS

CSM

MR

QMSD

System Administrator

User Account Management

Functional Units

Signatories

Logs

Home / User Account Management / View Account

System Administrator

CHANGE PASSWORD

EDIT

BACK

Username

admin

Name

System Administrator

Position

System Administrator

Functional Unit

Functional Unit 1

Role


Administrator

Status

Activated Account

PRIVILEGES ON MODULE

	View	Add	Edit
CSM	✓	✓	✓
QOA	✓	✓	✓
MR	✓	✓	✓
QMSD	✓	✓	✓



QMIS
MR QMSD
System Administrator ▾

User Account Management

Functional Units

Signatories

Logs

[Home](#) / [User Account Management](#) / [Edit Administrator](#)

Edit System Administrator

[BACK](#)

Name

Position

Functional Unit

Functional Unit 1 ▾

Role

Administrator ▾

Account Status

Activated ▾

username

Profile Photo(jpg)

default_1603266149.jpg

[Upload File](#)

PRIVELEGES ON MODULE

	View	Add	Edit
CSM	✓	✓	✓
OQA	✓	✓	✓
MR	✓	✓	✓
QMSD	✓	✓	✓

[EDIT](#)

The administrator can forcefully change the password of an account in case the user forgot his/her own password.

System Administrator

CHANGE PASSWORD

Password

Confirm New Password

CHANGE PASSWORD

Figure 14: Change Password for a User Account

The administrator can add, view and update functional units. The administrator sets the privileges of each functional unit.

Functional Units

#	Abbreviation	Name	VIEW	EDIT
1	UNIT1	Functional Unit 1	VIEW	EDIT
2	UNIT2	Functional Unit 2	VIEW	EDIT
3	UNIT3	Functional Unit 3	VIEW	EDIT
4	UNIT4	Functional Unit 4	VIEW	EDIT

Figure 15: Functional Units Page Index

Home / Functional Units / Add Functional Unit

Add Functional Unit BACK

Abbreviation

Name

PRIVELEGES ON MODULE

	View	Add	Edit
Check All	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CSM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QQA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QMSD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ADD

Figure 16: Add Functional Unit

Home / Functional Units / View Functional Unit

Functional Unit 1 EDIT BACK

Abbreviation

Name

PRIVELEGES ON MODULE

	View	Add	Edit
CSM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
QQA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
QMSD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 17: View Functional Unit

Home / Functional Units / Edit Functional Unit

Edit Functional Unit 1 BACK

Abbreviation

Name

PRIVELEGES ON MODULE

	View	Add	Edit
Check All	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CSM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
QQA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
QMSD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

EDIT

Figure 18: Update Functional Unit

The administrator can add, view and update signatories.

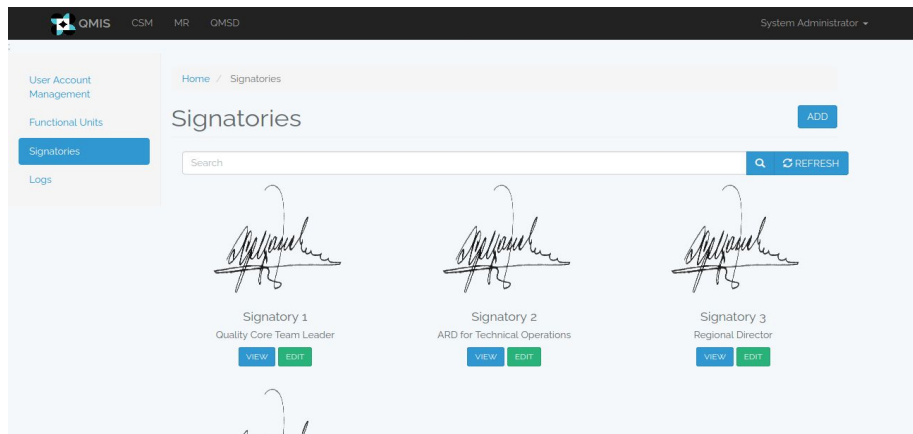


Figure 19: Signatories Page Index

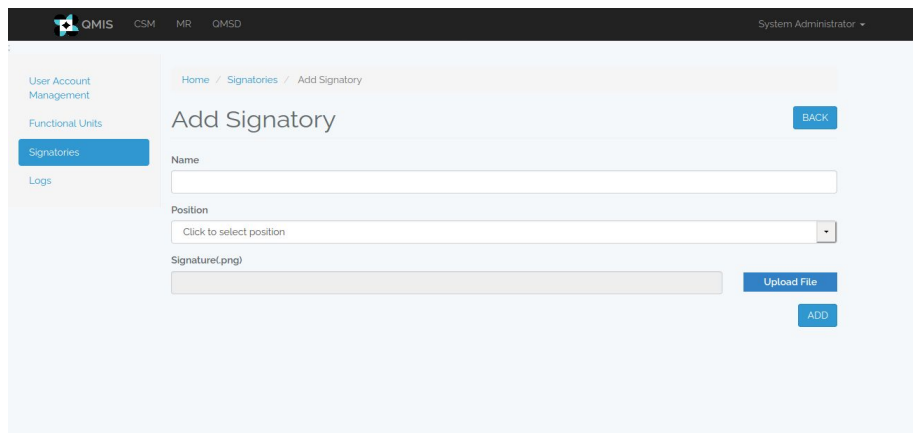


Figure 20: Add New Signatory

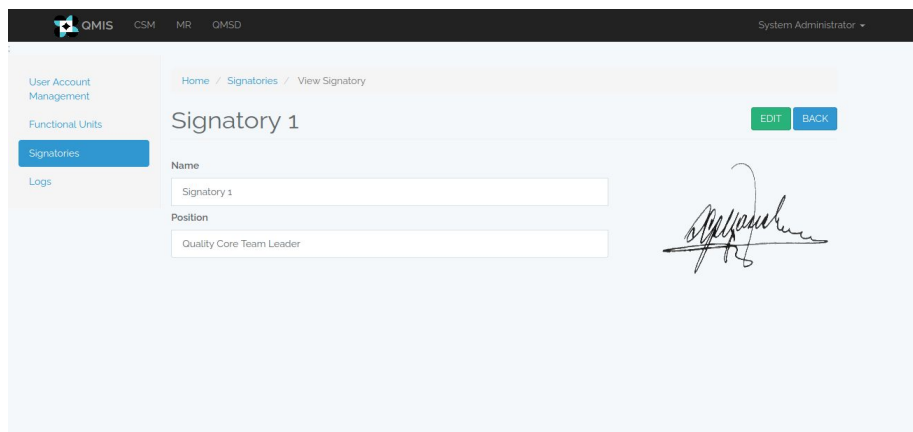


Figure 21: View Signatory

Home / Signatories / Edit Signatory

Edit Signatory BACK

Name
Signatory 1

Position
Quality Core Team Leader

Signature(.png)
sample_signature_1603428828.png Upload File

EDIT

Figure 22: Update Signatory

The administrator can view and search logs.

Home / Logs

System Logs

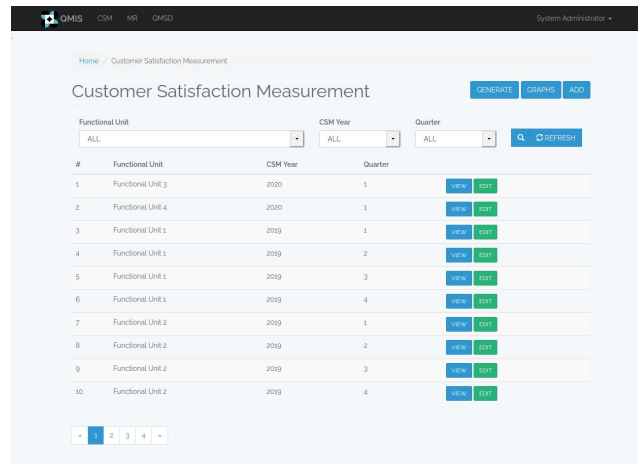
Search REFRESH

#	Name	Action	Module	Description	Timestamp
1	System Administrator	ADD	CSM	Added CSM for functional unit: Functional Unit 3 year: 2020 Quarter: 1	2020-10-23 04:59:58
2	System Administrator	ADD	CSM	Added CSM for functional unit: Functional Unit 4 year: 2020 Quarter: 1	2020-10-23 04:57:45
3	System Administrator	DOWNLOAD	CSM	Download Supporting documents	2020-10-23 04:55:19
4	System Administrator	DOWNLOAD	CSM	Download Supporting documents	2020-10-23 04:54:42
5	System Administrator	ADD	SIGNATORIES	Added new signatory Name: Signatory 1 Position: Quality Core Team Leader	2020-10-23 04:53:48
6	System Administrator	ADD	USER	Added new user Name: new manager Position: new manager	2020-10-23 04:52:46

Figure 23: Logs Page Index

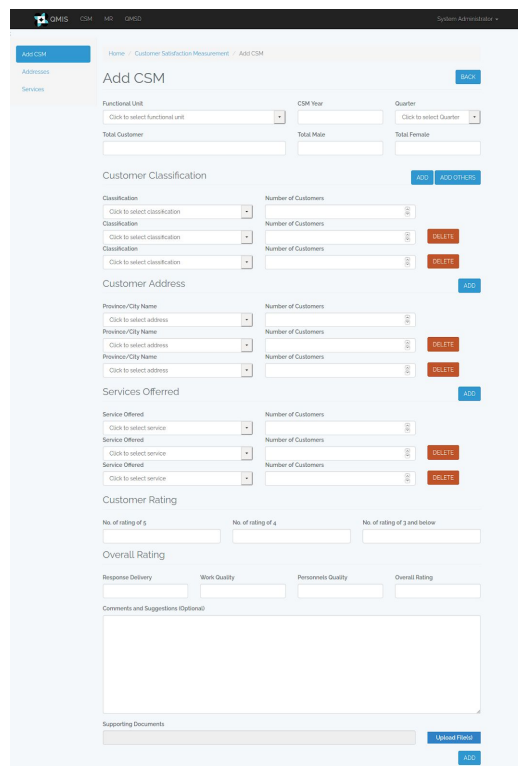
D. Customer Satisfaction Measurement(CSM) Module

Authorized users can add, view and update an entry in the CSM Module. Authorized users that can view an entry in the CSM Module can download the supporting documents uploaded in the entry.



#	Functional Unit	CSM Year	Quarter
1	Functional Unit 3	2020	1
2	Functional Unit 4	2020	1
3	Functional Unit 1	2019	1
4	Functional Unit 1	2019	2
5	Functional Unit 1	2019	3
6	Functional Unit 1	2019	4
7	Functional Unit 2	2019	1
8	Functional Unit 2	2019	2
9	Functional Unit 2	2019	3
10	Functional Unit 2	2019	4

Figure 24: CSM Module Page Index



Add CSM

Functional Unit: CSM Year: Quarter:

Total Customer: Total Male: Total Female:

Customer Classification

Classification: Number of Customers:

Classification: Number of Customers:

Classification: Number of Customers:

Customer Address

Province/City Name: Number of Customers:

Province/City Name: Number of Customers:

Province/City Name: Number of Customers:

Services Offered

Service Offered: Number of Customers:

Service Offered: Number of Customers:

Service Offered: Number of Customers:

Customer Rating

No. of rating of 5: No. of rating of 4: No. of rating of 3 and below:

Overall Rating

Response Delivery: Work Quality: Personnel Quality: Overall Rating:

Comments and Suggestions (Optional):

Supporting Documents:

Figure 25: Add an Entry to the CSM Module

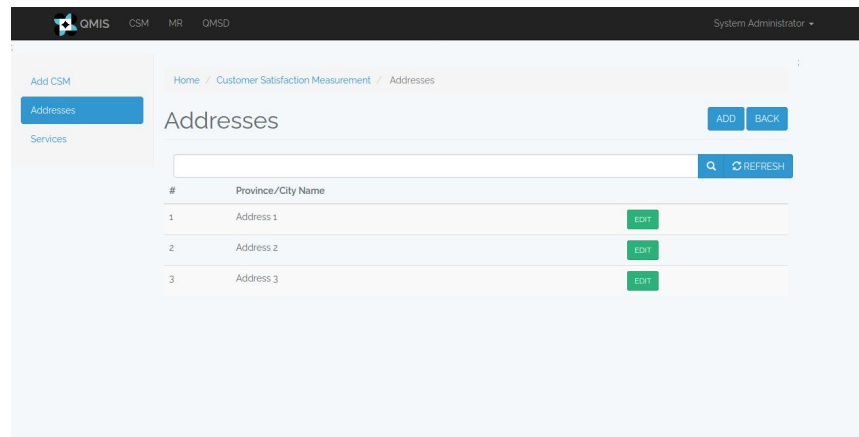


Figure 26: Addresses Page Index

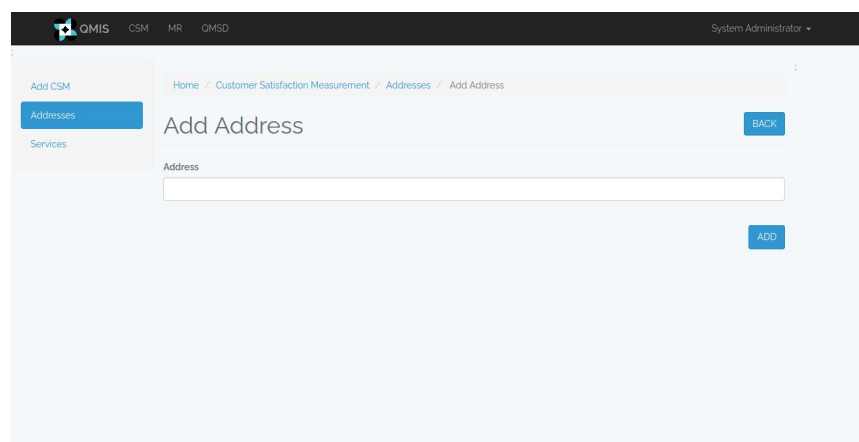


Figure 27: Add Address

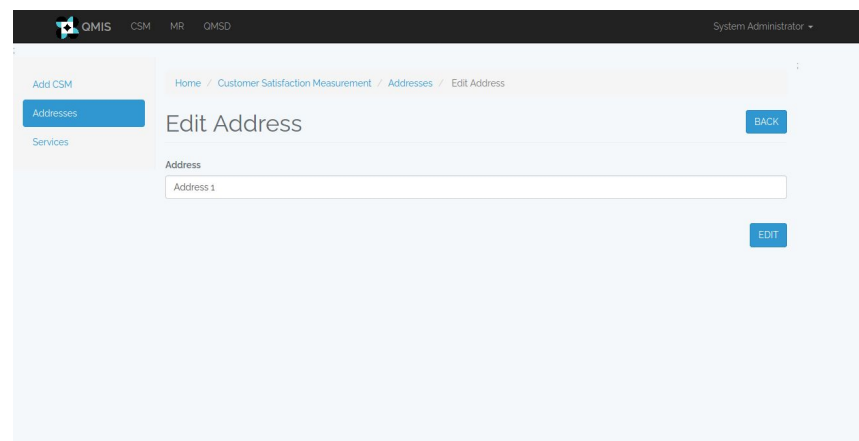


Figure 28: Update Address

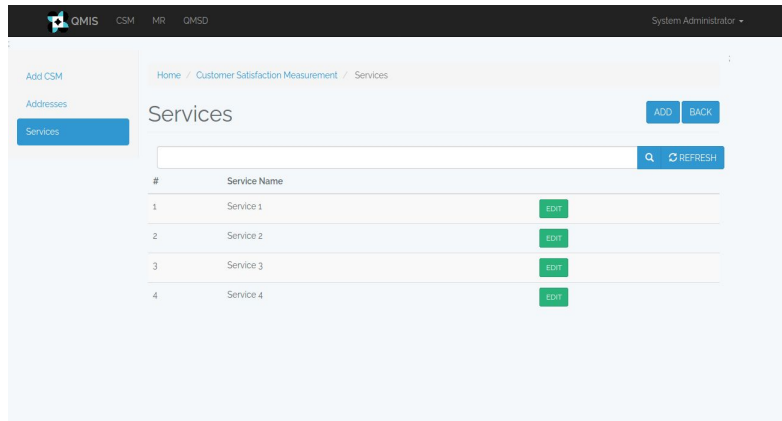


Figure 29: Services Page Index

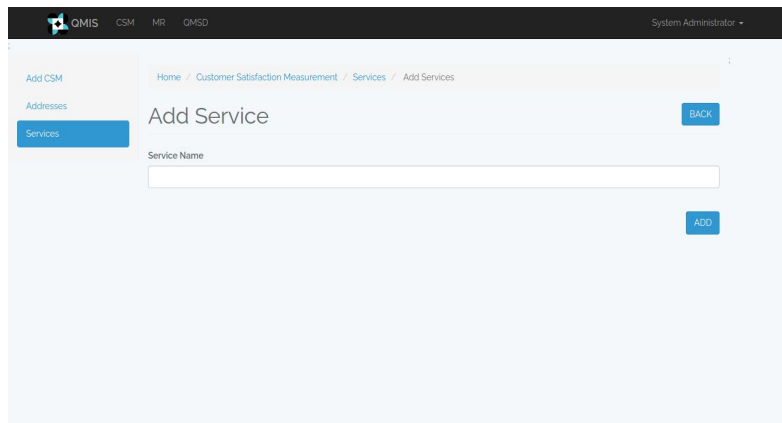


Figure 30: Add Service

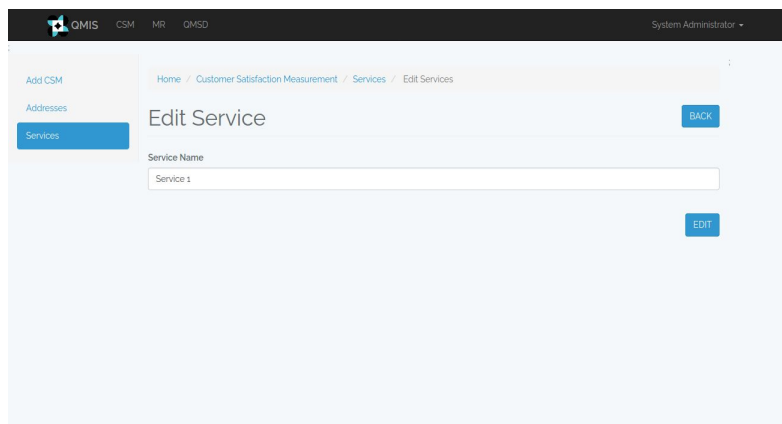


Figure 31: Update Service

QMIS CSM MR QMSD System Administrator

Home / Customer Satisfaction Measurement / View CSM

View CSM

[Download File\(s\)](#) [EDIT](#) [BACK](#)

Functional Unit Functional Unit 3	CSM Year 2020	Quarter 1
Total Customer 30	Total Male 15	Total Female 15

Customer Classification

Classification Business	Number of Customers 30
----------------------------	---------------------------

Customer Address

City/Province Address 1	Number of Customers 30
----------------------------	---------------------------

Services Offered

Service Offered Service 4	Number of Customers 30
------------------------------	---------------------------

Customer Rating

No. of rating of 5 25	No. of rating of 4 5	No. of rating of 3 and below 1
--------------------------	-------------------------	-----------------------------------

Overall Rating

Response Delivery 4.00	Work Quality 4.00	Personnel Quality 4.00	Overall Rating 4.00
---------------------------	----------------------	---------------------------	------------------------

Supporting Documents

Customer Satisfaction - 2.

Figure 32: View an Entry in the CSM Module

QMIS CSM MR QMSD System Administrator

Home / Customer Satisfaction Measurement / Edit CSM

Edit CSM

[BACK](#)

Functional Unit Functional Unit 3	CSM Year 2020	Quarter 1
Total Customer 30	Total Male 15	Total Female 15

Customer Classification

[ADD](#) [ADD OTHERS](#)

Classification Business	Number of Customers 30	DELETE
----------------------------	---------------------------	------------------------

Customer Address

[ADD](#)

Province/City Name Address 1	Number of Customers 30	DELETE
---------------------------------	---------------------------	------------------------

Services Offered

[ADD](#)

Service Offered Service 4	Number of Customers 30	DELETE
------------------------------	---------------------------	------------------------

Customer Rating

No. of rating of 5 25	No. of rating of 4 5	No. of rating of 3 and below 1
--------------------------	-------------------------	-----------------------------------

Overall Rating

Response Delivery 4.00	Work Quality 4.00	Personnel Quality 4.00	Overall Rating 4.00
---------------------------	----------------------	---------------------------	------------------------

Comments and Suggestions (Optional)

Supporting Documents

Customer Satisfaction - 2.

[Upload File\(s\)](#) [EDIT](#)

Figure 33: Update an Entry in the CSM Module

Users can generate a report that contains the overall summary about the satisfaction rating of the different functional units, the satisfaction rating compared to the previous year and the five year trend of the satisfaction rating of every functional unit.

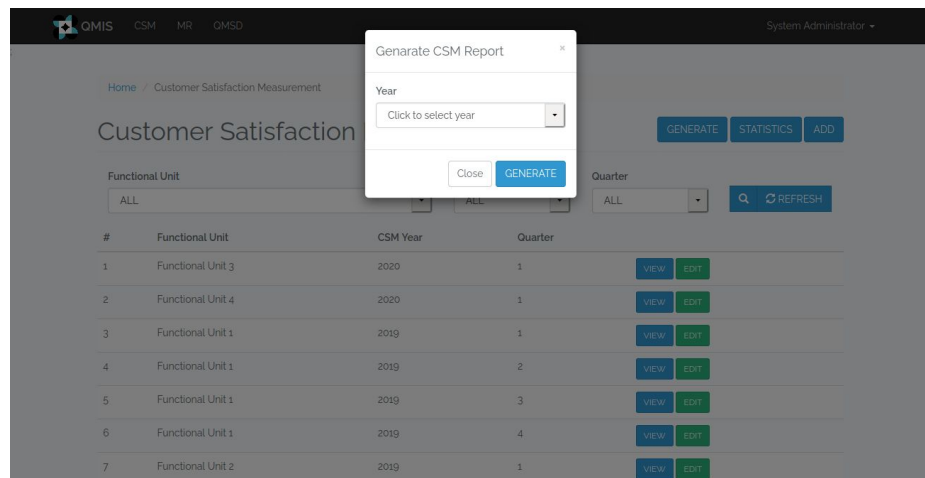


Figure 34: CSM Generate Report

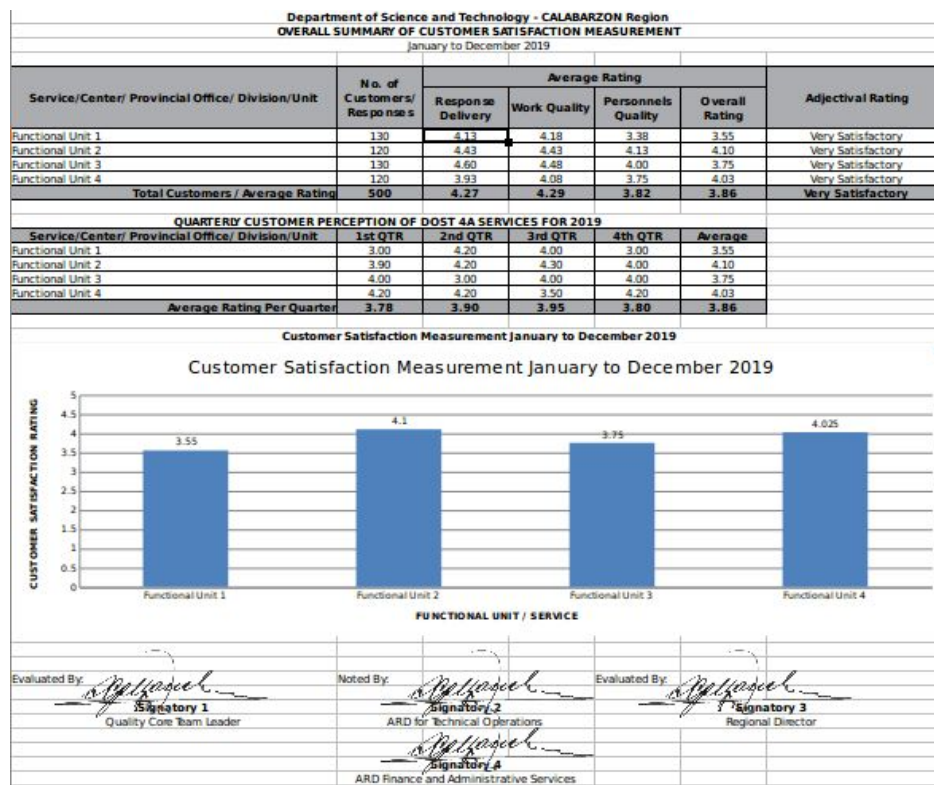


Figure 35: Sample Overall Yearly Summary Report

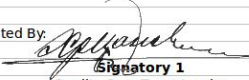
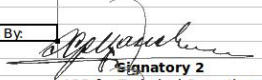
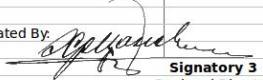
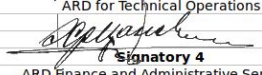
Department of Science and Technology - CALABARZON Region Comparison of Customer Satisfaction Measurement 2018 & 2019					
Service/Center/ Provincial Office/ Division/Unit	2019		2018		Standing
	Overall Rating	Adjectival Rating	Overall Rating	Adjectival Rating	
Functional Unit 1	3.55	Very Satisfactory	3.94	Very Satisfactory	-
Functional Unit 2	4.10	Very Satisfactory	3.85	Very Satisfactory	+
Functional Unit 3	3.75	Very Satisfactory	3.90	Very Satisfactory	-
Functional Unit 4	4.03	Very Satisfactory	4.27	Very Satisfactory	-
Mean Overall Rating	3.86	Very Satisfactory	3.99	Very Satisfactory	-
<div> <div> <div>Evaluated By: </div> <div>Noted By: </div> <div>Evaluated By: </div> </div> <div> <div>Signatory 1 Quality Core Team Leader</div> <div>Signatory 2 ARD for Technical Operations</div> <div>Signatory 3 Regional Director</div> </div> <div> <div></div> <div>Signatory 4 ARD Finance and Administrative Services</div> </div> </div>					

Figure 36: Sample Satisfaction Rating Comparison Report

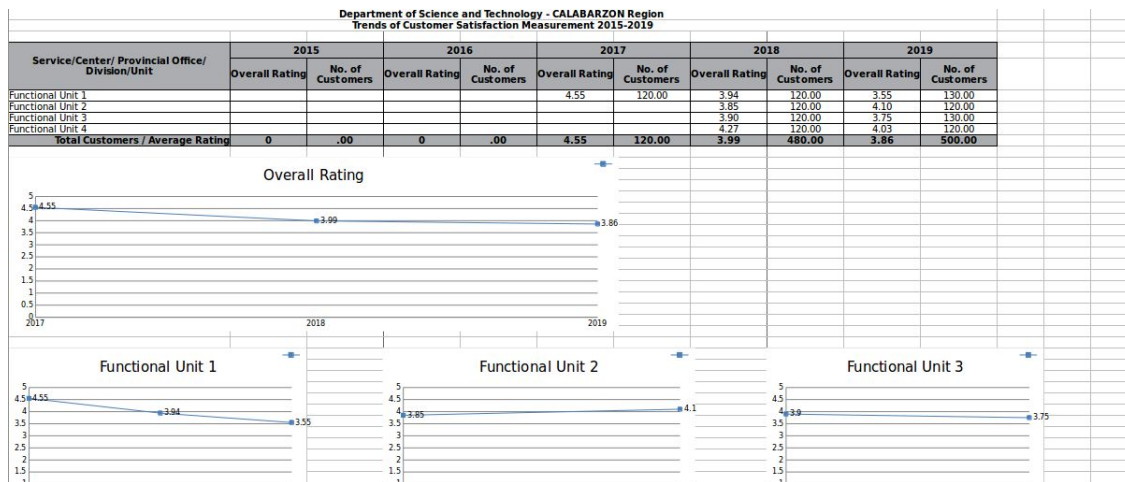


Figure 37: Sample 5 Year Satisfaction Ratings Trend

Users can view yearly CSM data graphically. It shows the overall satisfaction rating from the 1st to 4th quarter of the year, the ratings given by the customers to the functional unit, the distribution of the different services availed by the customers and lastly the distribution of the addresses to know where the customer came from.

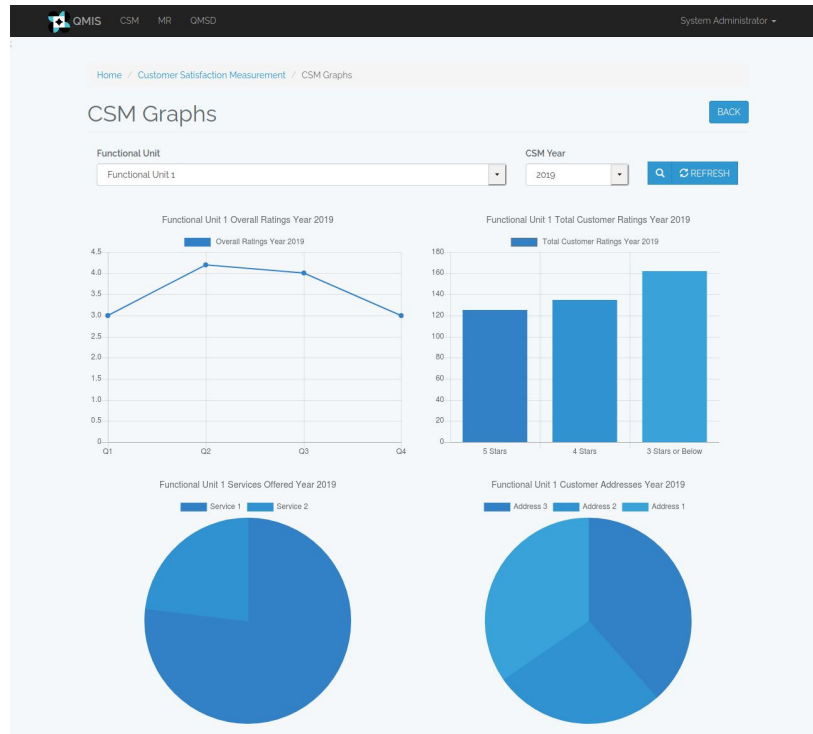


Figure 38: CSM Yearly Graphical Data

E. Management Review(MR) Module

Authorized users can add, view and update an entry in the MR Module. Authorized users that can view an entry in the MR Module can download the supporting documents uploaded in the entry.

The screenshot displays the 'Management Review' page. At the top, there's a navigation bar with 'QMIS', 'CSM', 'MR', and 'QMSD'. The main header shows 'Home / Management Review'. Below this, there's a search bar and a 'REFRESH' button. The main area contains a table with the following data:

#	Meeting Name	Venue	Date	Actions
1	Meeting 1	Venue 1	2020-10-16	VIEW EDIT
2	Meeting 2	Venue 2	2020-10-12	VIEW EDIT
3	Meeting 4	Venue 4	2020-10-21	VIEW EDIT

Figure 39: MR Module Page Index

QMIS CSM MR QMSD System Administrator

Home / Management Review / Add MR

Add MR

Meeting name:

Venue:

Date: 06 / 11 / 2020

Attendance Sheet: [Upload File](#)

Action Plan: [Upload File](#)

Minutes: [Upload File](#)

Agenda Memo: [Upload File](#)

Presentation Slides: [Upload File\(s\)](#)

Other Files (Optional): [Upload File\(s\)](#)

Other Files Description (Optional):

[BACK](#) [ADD](#)

Figure 40: Add an Entry to the MR Module

QMIS CSM MR QMSD System Administrator

Home / Management Review / View MR

View MR

Meeting Name: Meeting 1

Venue: Venue 1

Date: 2020-10-15

Attendance Sheet: attendance_sheet\attendance.pdf [Download File](#)

Action Plan: action_plan\action_plan.pdf [Download File](#)

Minutes: minutes\minutes.pdf [Download File](#)

Agenda Memo: agenda_memo\agenda_memo.pdf [Download File](#)

Presentation Slide: presentation_slides.pdf [Download File\(s\)](#)

Other Files: file 3

Other Files Description: description

[Download All](#) [EDIT](#) [BACK](#)

Figure 41: View an Entry in the MR Module

QMIS CSM MR QMSD System Administrator

Home / Management Review / Edit MR

Edit MR

Meeting name: Meeting 1

Venue: Venue 1

Date: 15 / 10 / 2020

Attendance Sheet: attendance_sheet\attendance.pdf [Upload File](#)

Action Plan: action_plan\action_plan.pdf [Upload File](#)

Minutes: minutes\minutes.pdf [Upload File](#)

Agenda Memo: agenda_memo\agenda_memo.pdf [Upload File](#)

Presentation Slides: presentation_slides.pdf [Upload File\(s\)](#)

Other Files (Optional): file 3 [Upload File\(s\)](#)

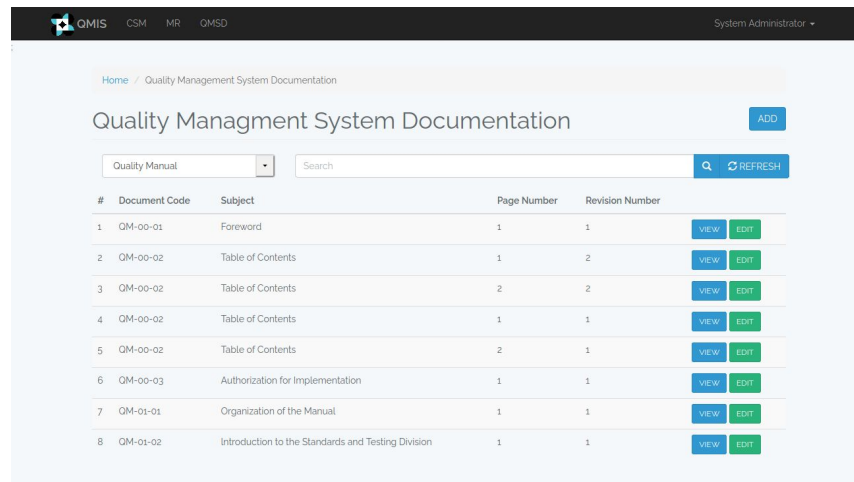
Other Files Description (Optional): description

[BACK](#) [EDIT](#)

Figure 42: Update an Entry in the MR Module

F. Quality Management System Documentation(QMSD) Module

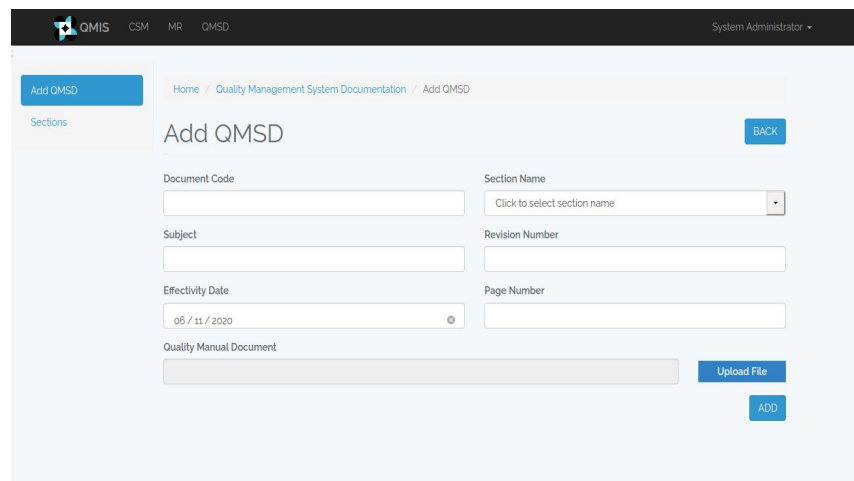
Authorized users can add, view and update an entry in the QMSD Module. Authorized users that can view an entry in the QMSD Module can download the supporting documents uploaded in the entry.



The screenshot shows the 'Quality Management System Documentation' page. It features a table with 8 rows of document entries. Each row includes a document code, subject, page number, and revision number, along with 'VIEW' and 'EDIT' buttons. The table is titled 'Quality Management System Documentation' and has a search bar and a refresh button at the top.

#	Document Code	Subject	Page Number	Revision Number		
1	QM-00-01	Foreword	1	1	VIEW	EDIT
2	QM-00-02	Table of Contents	1	2	VIEW	EDIT
3	QM-00-02	Table of Contents	2	2	VIEW	EDIT
4	QM-00-02	Table of Contents	1	1	VIEW	EDIT
5	QM-00-02	Table of Contents	2	1	VIEW	EDIT
6	QM-00-03	Authorization for Implementation	1	1	VIEW	EDIT
7	QM-01-01	Organization of the Manual	1	1	VIEW	EDIT
8	QM-01-02	Introduction to the Standards and Testing Division	1	1	VIEW	EDIT

Figure 43: QMSD Module Page Index



The screenshot shows the 'Add QMSD' form. It includes fields for Document Code, Subject, Effectivity Date, Section Name, Revision Number, and Page Number. There is also a field for the Quality Manual Document with an 'Upload File' button. The form is titled 'Add QMSD' and has a 'BACK' button at the top right.

Document Code:

Section Name:

Subject:

Revision Number:

Effectivity Date:

Page Number:

Quality Manual Document:

Upload File:

ADD:

Figure 44: Add an Entry to QMSD Module

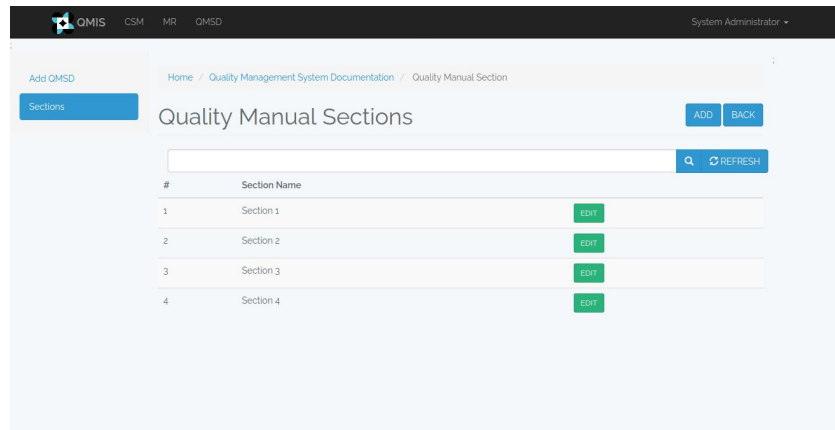


Figure 45: Sections Page Index

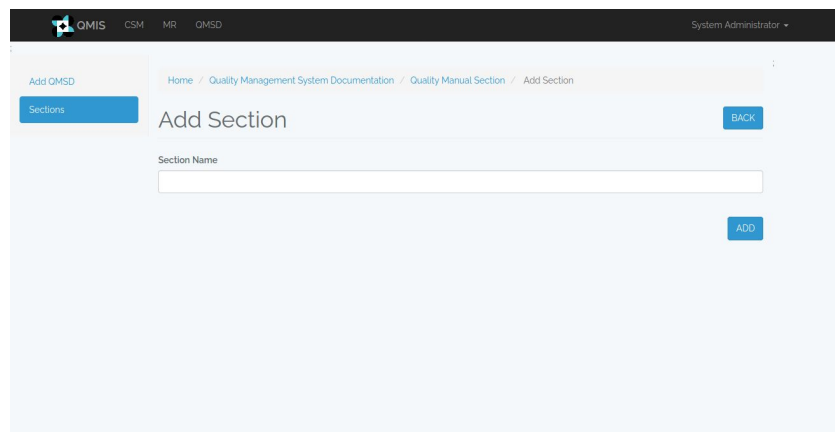


Figure 46: Add Section

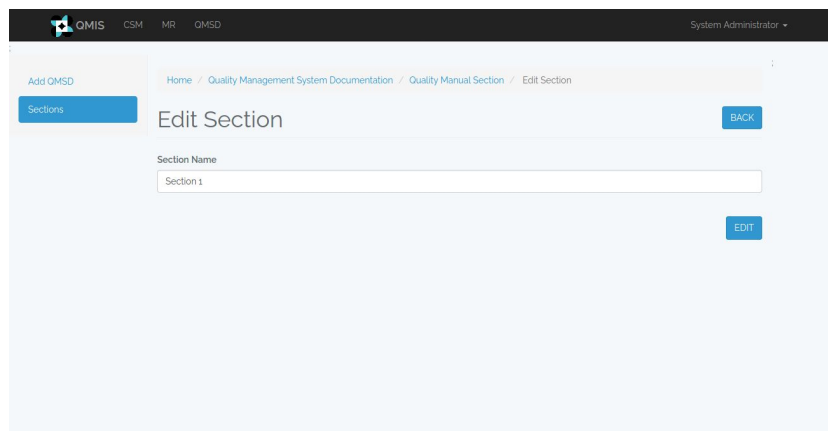


Figure 47: Update Section

QMIS CSM MR QMSD System Administrator

Home / Quality Management System Documentation / View QMSD

View QMSD

[EDIT](#) [BACK](#)

Document Code	Section
QM-00-01	Section 4
Subject	Revision Number
Foreword	1
Effectivity Date	Page Number
2020-02-05	1
Quality Manual Document	
file_1_1503341738	

[Download File](#)

Figure 48: View an Entry in the QMSD Module

QMIS CSM MR QMSD System Administrator

Home / Quality Management System Documentation / Edit QMSD

Edit QMSD

[BACK](#)

Document Code	Section Name
QM-00-01	Section 4
Subject	Revision Number
Foreword	1
Effectivity Date	Page Number
05 / 02 / 2020	1
Quality Manual Document	
file_1_1503341738	

[Upload File](#) [EDIT](#)

Figure 49: Update an Entry in the QMSD Module

G. System Usability Scale(SUS) Evaluation

The System Usability Scale is the most frequently used questionnaire to measure the usability of systems and applications. In this study, SUS was used since it is proven to be a method that produces reliable results. After using the system, the respondents answered a 10 item questionnaire with five response options; from strongly agree (5) to strongly disagree (1) The following are the questions included in the survey form:

1. I think that I would like to use this system frequently.
2. I found the system unnecessarily complex.

3. I thought the system was easy to use.
4. I think that I would need the support of a technical person to be able to use this system.
5. I found the various functions in this system were well integrated.
6. I thought there was too much inconsistency in this system.
7. I would imagine that most people would learn to use this system very quickly.
8. I found the system very cumbersome to use.
9. I felt very confident using the system.
10. I needed to learn a lot of things before I could get going with this system.

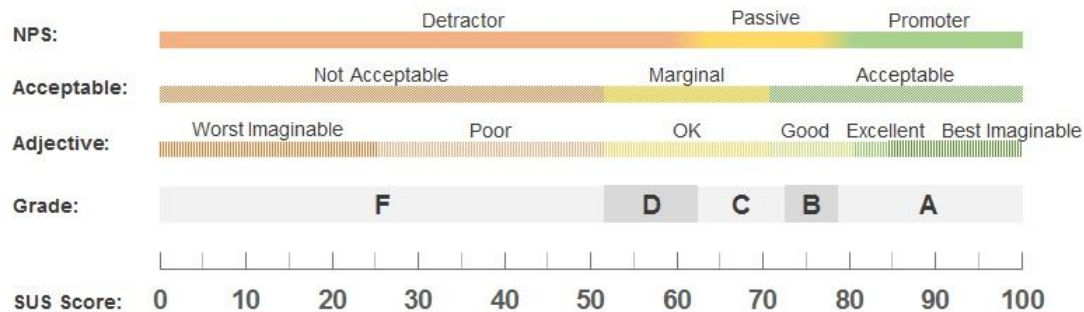


Figure 50: Grades, adjectives, and acceptability associated with raw SUS scores.

The scores for each question were interpreted by getting the SUS raw score: subtract one from the user responses for odd items and subtract the user responses from 5 to even items in the questionnaire. The only respondent to the survey is Mr. Francis Braquilla III, Director of the DOST IV-A MIS Unit. He gave a score of 62.5. Based on the SUS score measurement (Figure 50), the score gets a grade of D, an adjectival rating of "OK" and an acceptability rating of "marginally acceptable". This also means that the system is considered to be below average since the standard average SUS score is 68.

CHAPTER V

SUMMARY AND CONCLUSION

The developer was able to develop a Quality Management Information System for the DOST IV-A regional office. The developer was able to implement the Customer Satisfaction Measurement(CSM) Module that was able to collect quarterly customer satisfaction rating of different functional units. The user was able to view the yearly graphical data of the different functional units of the regional office. The user was able to generate a report which contains the overall summary about the satisfaction rating of the different functional units, the satisfaction rating compared to the previous year and lastly the five year trend of the satisfaction rating of each functional unit. The developer was able to develop the Management Review(MR) Module that was able to record all the meetings held that are relevant to the progress of the regional office. These modules disseminate relevant information about the meetings to authorized users. Each entry in the module contains the name of the meeting, its agenda and relevant documents such as minutes of the meeting, the attendance sheet, the action plan of the office and the presentation slides used in the meeting. Lastly the developer was able to implement the Quality Management System Documentation(QMSD) Module that acts as the repository of the quality manual used by the regional office for easier retrieval of relevant information about the rules and standards of the regional office. The developer conducted a survey that measured the system's functionalities and usability and got a SUS score of 62.5.

CHAPTER VI

RECOMMENDATIONS

The system can be further improved by adding a graphical representation that contains the yearly overall rating of all the functional units and its five year trend for easier data comparison without generating a document. The system can also be improved by adding email or phone number to send notifications whenever there is a new entry to the MR Module or there are revisions on the quality manual used by the regional office. The system can also be improved by archiving the previous versions of the rules and regulations of the quality manual used by the regional office.

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