THE APPLICATION OF CRM (CUSTOMER RELATIONSHIP MANAGEMENT) FOR DETERMINATION OF SERVICE QUALITY IMPROVEMENT BASED ON CUSTOMER COMPLAINT MANAGEMENT AT PT. TUNAS ENGINEERING

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ABSTRACT

PT. Tunas Engineering provides design and engineering consulting services and is supported by human resources who have over five years of work experience in construction planning. The condition of the problem at the company that is identified that the unavailability of means to accommodate complaints from the customer related two types of services provided. This should be improved to maximize the services available in the company based on service quality improvement.

CRM is an agency strategy used to pamper customers. Through the implementation of CRM, the company is expected to establish good communication and relationships with its customers so that in producing a service or product, the company not only sells and markets but also can answer the wishes and needs of customers [1]. Service Quality Method or Service can know the level of service quality based on the gap that occurs between the facts and expectations of the Customer. The Quality of Service or Service Quality method by Parasuraman can be defined as "How far is the difference between the reality and the expectations of the customers for the services they receive or receive", [8].

Based on the results of black box testing and beta testing it can be concluded that the information system of service quality improvement can help Director, Mgt. Services in managing customer complaints, and can also assist the Director, Mgt. Services in improving the quality of service, and also can assist Customers in complaints to the company.

Kata kunci : *Customer Relationship Management*, *Customer*

1. INTRODUCTION

The field of design advisory services provide services such as: structural design, infrastructure design, tower structure design, telecommunication tower structure design, while the Engineering field provides services such as engineering survey & laboratory test, NDT concrete test engineering, audit survey & building structure assessment. These fields are the types of services that are located in PT. Tunas Engineering.

Based on the interview with Agus Supiyat, ST. as Director and Mr. Gozali, ST. as Mgt. Services at PT. Tunas Engineering states that it has found the condition of the problem at the company that is identified that the unavailability of means to accommodate complaints from customers related to the two types of services provided. This should be improved to maximize the services available in the company based on service quality improvement.

From these identification results, there are also facts that support all the problems experienced by the company, such as the presence of several types of complaints, such as: completion time, design conformity, service quality and price. There are 50 complaints data from 4 types of complaints proposed, of course, the negative impact on the services provided such as: two types of services will be considered bad by the customer because of the many complaints submitted, this becomes the task to be solved that is by maximizing the service so the complaint level can be minimized well. In addition, there are also existing data referenced in the Appendix of data on complaints submitted, among others: Response and poor communication, Less appropriate in coordination and timeline specified, and so forth.

CRM is an agency strategy used to pamper customers. Through the implementation of CRM, the company is expected to establish good communication and relationships with its customers so that in producing a service or product, the company not only sells and markets but also can answer the wishes and needs of customers [1].

The solution to be offered related to the above problem is using CRM. Types of CRM Information Systems to be built using the Analitycal CRM approach.

1.1. CRM

CRM is an agency strategy used to pamper customers. Through the application of CRM, the company is expected to establish good communication and relationships with its customers so that in producing a service or product, the company not only sells and markets but also can answer the wants and needs of customers [1].

1.2. *Framework of Dynamic* CRM

To properly define CRM features, as a basis for compiling the SRS (Software Requirement Specification), a framework for reference is required. CH Park & YG Kim proposed a CRM Framework called "A framework of dynamic CRM". This framework describes a series of stages in the application of CRM. The most important substantive is the information obtained from the customer so that the output obtained in the form of Relationship Commitment, the model is seen in Figure 3. The information that becomes the focus of attention is as follows [4]:

1. Information about the customer
2. Information for customers
3. Information by customers

There are 3 phase mapping needs level among others [5]:

1. Phase Acquisition

Implemented in the acquire process. Acuisition phase is the stage where the agency tries to get to know the customer [5].

2. Retention Phase

Implemented in the enhance process. Retention phase is the stage where the company tries to provide information to the customer to be more familiar with the agency [5].

3. Expansion phase

Implemented in the retain process. Expansion phase is the stage where the company obtained information from customers which then can help expand the company in accordance with the desired customer [5].

1.3. Complaint Management

Customer complaint management is a process implemented through an organization to handle, manage, provide responders and report consumer complaints. The system is designed to be able to track complaints and track trends of complaints noted in customer complaint processes. The function of the customer complaint system is to analyze the correct improvements that must be performed and to assess the level of user satisfaction and prevent the same recurrence of complaints. Effective customer complaints management can be built gradually through the following steps [6]:

1. Determine the location to receive a complaint, the location should be easily reachable by the consumer, and publish the location so that consumers would voice their complaint through the space provided [6].
2. Establish a system to record complaints, including recording, categorization and description of complaints. The system should also be able to perform other functions such as communicating complaints to upper management, identifying and forwarding complaints to others if necessary, underpinning complaint trend research, and facilitating management to monitor the efficiency and effectiveness of customer complaints management systems [6].
3. Implement and record complaints that include recording of all complaints submitted, categorization, assignment of complaints handling [6].
4. Appreciate the complaints submitted [6].
5. Investigation and analysis of complaints submitted [6].
6. Resolving the problem according to the consistency aspect and company policy in general [6].
7. Follow up to find out if the consumer is satisfied with the solution given [6].
8. Make reports of complaints and analysis periodically patterns and trends of incoming complaints [6].

Key features of customer complaints systems such as centralized location for complaints, systems for recording complaints, logging history of complaints, methods for responding to complaints (eg mailing customers), processes for examining complaints, and how to resolve complaints and actions follow-up of the given solution [6].

1.4. Customer

Customer is a person or group who uses products or services on a regular basis [7].

1. Internal customers are customers who have an influence on the organization and affect the company's performance [7].
2. External customers are customers who consume products [7].

1.5. Customer Satisfaction

Customers are not just disappointed with the service, but they very rarely complain. The reason is that they are involved with the process of making or creating the service.

Engel, at al argues that customer satisfaction is to evaluate after-sale where the chosen alternatives minimally provide outcomes equal or exceeded, while dissatisfaction arises if the results obtained do not meet customer expectations [8].

2. RESEARCH CONTENTS

2.1. *framework analysis CRM*

Type of SI CRM designed using Analitycal CRM approach. Analitycal CRM plays a role in conducting customer analysis, as well as needs analysis and customer behavior.

CRM framework used in the development of SI CRM at PT. Tunas Engineering is Dynamic CRM. The phase contained in CRM is Acquisition-Retention-Expansion. As an integrated CRM framework.

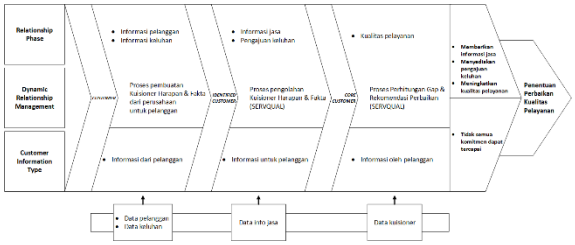


Figure 1. CRM Framework Analysis at PT. Tunas Engineering

The steps of each process contained in the CRM Framework, among others:

1. Acquisition

Phase Acquisition is the stage where the company tries to get to know the customers in PT. Tunas Engineering interested in using the services offered by the company. Implemented at the Acquire stage [5].

a. Customer Information

This is explained about all customer information in PT. Tunas Engineering to know the number of customers along with other information. Especially to be accessible by Mgt. Services.

b. Complaint Information

This is explained about all the complaint information in PT. Tunas Engineering to facilitate the company in knowing and getting customer complaints information. Especially to be accessible by Mgt. Services.

2. Retention

Retention phase is the stage where the company conveys information to the customer. Information gained by customers include customer complaint submission information. Implemented at Enhance stage [5].

a. Information Services

This is explained about all information services at PT. Tunas Engineering to facilitate customers in knowing and getting information services company.

b. Submission of Complaint

Customers may file a complaint through the SI CRM to be built. The existence of this CRM Information System will be an advantage for customers especially:

1. Minimize the excessive cost of filing a complaint when using the phone.

2. Minimize the cost of customers to no longer need to come to the company for filing a complaint, only access to CRM Information System.

3. Expansion

Expansion phase is the stage where the company obtains information from the customer which then can help the improvement of the services of the institution in accordance with the desired customer. Implemented at Retain stage [5].

a. Service quality

This is done by the process of measuring the quality of service done by distributing questionnaires to the customers until the calculation phase of the results of the questionnaire. From the questionnaire division obtained data on the assessment of respondents. Customers must fill out a questionnaire on the assessment of service quality at PT. Tunas Engineering.

Service is divided into two types, namely:

1. Design Consulting Services
2. Engineering Services.

2.2. Database Analysis

CRM Information System Analysis required a modeling that will be used in the design of this database using ERD, among others:

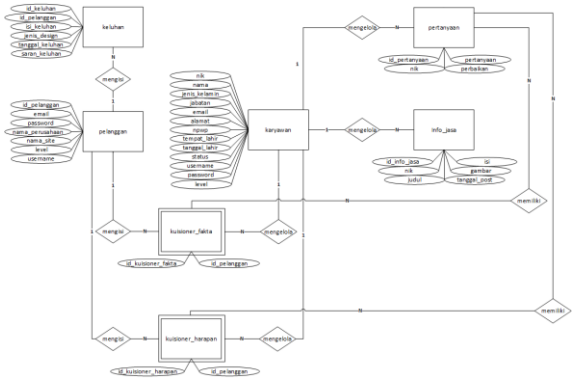


Figure 2. Database Analysis

2.3. Context Diagram

Context diagram is the first diagram of the DFD that describes the input or output of a system and relationships in the system with its users. The users involved include Customer, Mgt. Services, Director. Context diagram contained in the system include:

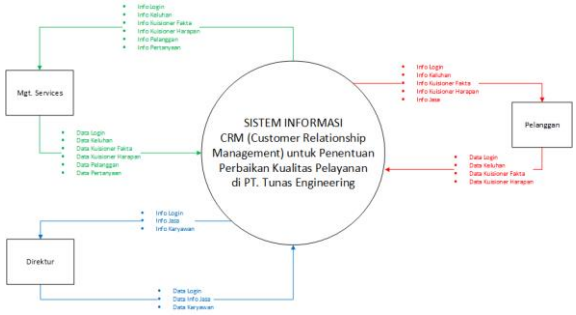


Figure 3. Context Diagram

2.4. DFD (*Data Flow Diagram*)

DFD is how the data flow and describes the existing detail process. In the Context Diagram in Figure 3 can be decomposed into several DFDs.

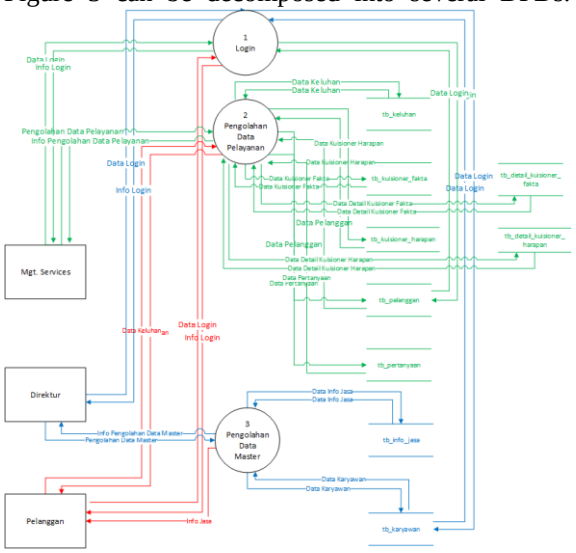


Figure 4. DFD Level 1

2.5. Relation Scheme

Relationship scheme is a description of some data associated with other data and its restrictions, among others:

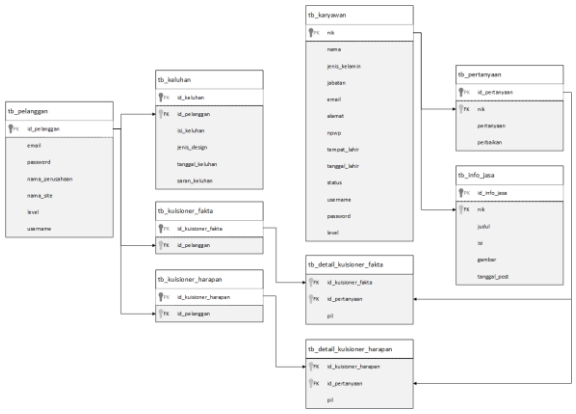


Figure 5. Relation Scheme

2.6. Menu Structure Design

The design of the menu structure is designed to provide the functions that will be used in the SI CRM to be built. As for some parts that are included in the design of the structure of the menu structure Mgt. Services, Director menu structure, Customer menu structure.

2.6.1 Menu Structure Mgt. Services

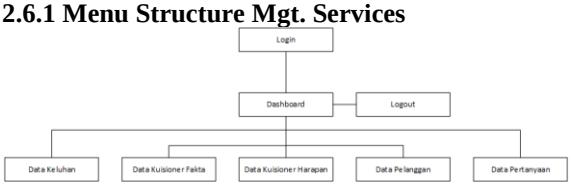


Figure 6. Menu Structure Mgt. Services

2.6.2 Director Menu Structure

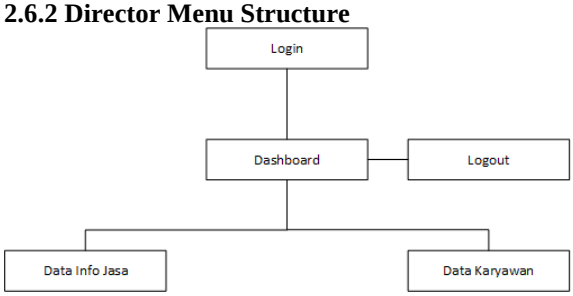


Figure 7. Director Menu Structure

2.6.3 Customer Menu Structure

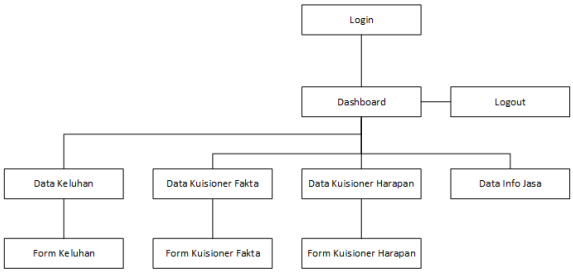


Figure 8. Customer Menu Structure

2.7. Interface Implementation

Implementation of the interface is performed based on each view of the system built with the coding in the form of program files, among others:

2.7.1. Implementation Interface Director

Table 1. Implementation of Director interface

Menu	Description	File Name
Login	Serves to enter the system	login_karyawan.php
Dashboard	Works for the main view	dashboard.php
Data Info Jasa	Serves to manage Data Info Services	index_info_jasa.php
Data Karyawan	Serves to process Employee Data	index_karyawan.php
Logout	Serves to exit the system	logout.php

2.7.2. Interface Implementation Mgt. Services

Table 2. Implementation of Mgt interface. Services

Menu	Description	File Name
Login	Serves to enter the system	login_karyawan.php
Dashboard	Works for the main view	dashboard.php
Data Keluhan	Serves to manage Complaints Data	index_keluhan.php
Data Kuisioner Harapan	Serves to process Data of Hope Questionnaire	index_kuisioner_harapan.php
Data Kuisioner Fakta	Serves to manage Data Factual Questionnaire	index_kuisioner_fakta.php
Data Pelanggan	Serves to process Customer Data	index_pelanggan.php
Data Pertanyaan	Serves to manage Question Data	index_pertanyaan.php
Logout	Serves to exit the system	logout.php

2.7.3. Implementation of Customer Interface

Table 3. Implementation of Customer Interface

Menu	Description	File Name
Login	Serves to enter the system	login_pelanggan.php
Dashboard	Works for the main view	dashboard.php
Data Keluhan	Serves for Complaints Data input	index_keluhan.php
Data Kuisioner Harapan	Serves for Data Questioner Hope input	index_kuisioner_harapan.php
Data Kuisioner Fakta	Serves for input Data Factual Questionnaire	index_kuisioner_fakta.php
Data Info Jasa	Serves to view Data Services Info	index_info_jasa.php
Logout	Serves to exit the system	logout.php

2.8. System Testing

Testing the system intended to determine the performance of information systems that have been made in accordance with the purpose of designing information systems. Testing this system using Black Box testing.

Table 4. Black box testing scenario

Testing Class	Testing Detail	Testing Type
Login	Login	*Black Box*
Pengolahan Data Pelayanan	Pengolahan Data Keluhan Tambah Data Keluhan Hapus Data Keluhan Persentase Keluhan Persentase Jenis Pelayanan Lihat Data Keluhan	*Black Box*
	Pengolahan Data Kuisioner Fakta Tambah Data Kuisioner Fakta Perhitungan Gap Rekomendasi Perbaikan Lihat Data Kuisioner Fakta	
	Pengolahan Data Kuisioner Harapan Tambah Data Kuisioner Harapan Lihat Data Kuisioner Harapan	
	Pengolahan Data Pelanggan Tambah Data Pelanggan Hapus Data Pelanggan Ubah Data Pelanggan Lihat Data Pelanggan	
	Pengolahan Data Pertanyaan Tambah Data Pertanyaan Hapus Data Pertanyaan Ubah Data Pertanyaan Lihat Data Pertanyaan	
Pengolahan Data Master	Pengolahan Data Info Jasa Tambah Data Info Jasa Hapus Data Info Jasa Ubah Data Info Jasa Lihat Data Info Jasa	*Black Box*
	Pengolahan Data Karyawan Tambah Data Karyawan Hapus Data Karyawan Ubah Data Karyawan Lihat Data Karyawan	

3. CLOSING

3.1. Conclusion

Based on the test results with this can be drawn conclusions, among others:

1. This CRM Information System can help the Mgt. Services in maximizing the service based on the determination of service quality improvement, on complaints from the customer related services provided.

3.2. Suggestion

Suggestions that can be given to the development of systems that have been made for further system development such as:

1. The existence of customer testimony that is positive to the company so that the appeal of better agencies in the eyes of other customers.
2. The addition of sms gateway feature to the submission of customer complaints at PT. Tunas Engineering.

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