MEASURING SERVICE QUALITY AND MANAGEMENT PRIORITY OF COMPLAINTS HANDLING WITH CRM APPROACH IN KOPERASI USAHA KITA PT. PLN (PERSERO) CIMAHI

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ABSTRACT

Koperasi Usaha Kita are a cooperative owned by PT. PLN (Persero) Cimahi established in 1997. At present a complaint from any member member only told with oral and grievances have not been documented. During this cooperative effort we have never explored the level of Member satisfaction with quality of services provided, so that they do not know and can not evaluate the services already provided to members of the cooperative. The policy of the company (PT. PLN (Persero)) about the service of members of the cooperative until now has not resulted in measurable quality of service of the existing policy. If this is not taken seriously, resulting in decline in a sense of trust members.

By doing the analysis with Servqual method can determine the level of quality of service based on the gap between perception and expectation of Members. As well as methods TOPSIS who have chosen an alternative concept which is the best alternative that has the shortest distance from the positive ideal solution and the farthest distance from the negative ideal solution.

Based on the results of functional tests have been done on the CRM information system in Koperasi Usaha Kita may conclude that the functional system can assist the cooperative in the process of measuring the quality of services and can assist the cooperative in determining the priority handling of complaints member.

Keywords **:** Koperasi, *Costumer Relationship Management, Servqual, TOPSIS*

1. INTRODUCTION

Koperasi Usaha Kita are a cooperative owned by PT. PLN (Persero) Cimahi established in 1997. Currently, the cooperative work done covers in several sectors of the Organization, Administration Secretariat, Finance, Capital Business Sector, and others. The business sectors that exist on the cooperative capital is that lending and borrowing, obligations of members, the fund's death, the business stuff, more businesses, capital, receivables, operating results, and the elimination of depreciation, reserves, business attainment, fields others. Based on the interview with the chairman of Koperasi Usaha Kita, there are some problems. One of them is the issue of the complaint from any member of the cooperative. Such as savings and credit problems, the problem THR, service problems and others. Members are often complain about the miscalculated amount of money, the delay of money, and others. The ongoing procedure complaint from any member are only told with oral and grievances have not been documented. Due to the absence of a system to document the complaints, sometimes complaints from members neglected. Whereas the complaints of members can be used as an evaluation to measure the current services provided by the cooperative. At present, cooperative effort we have never explored the level of Member satisfaction with quality of services has been provided mainly in the field of savings and loans, so they do not know and can not evaluate service savings and loans that have been given to members of the cooperative. Due to the savings and loan process is very important for a cooperative, but the policy of the company (PT. PLN (Persero)) about the service of members of the cooperative until now has not resulted in measurable quality of service of the existing policy. If this is not taken seriously, resulting in decline in a sense of trust members.

By doing the analysis with Servqual Method and Technique for Others Preference by Similarity to Ideal Solution (TOPSIS) methods can determine the level of quality of service based on the gap between perception and expectation of Members, dimensions used are: responsiveness, reliability , assurance, empathy, tangibles. Servqual is a questionnaire that is used to measure the quality of services developed in the 1980s by Zeithaml, Parasuraman & Berry, and has been used in measuring a wide range of quality services. With this questionnaire, we can know how big the gap that exists between members' perceptions and expectations of members of the service savings in the cooperative. While TOPSIS method is one of multiple criteria decision making method that was first introduced by Yoon and Hwang in 1981. This

method is one of many methods used to solve practical decision-making. TOPSIS have a concept whereby the selected alternative is the best alternative that has the shortest distance from the positive ideal solution and the farthest distance from the negative ideal solution. Increasing number of factors that must be considered in the decision making process, the more relatively difficult also to take a decision on an issue.

Based on the problems described above and therefore needed a system to measure and documenting the complaint using the Customer Relationship Management approach to solve the problem.

The purpose of this study is: Determine the matrix solution idealizedpositive and negative ideal solution matrix

1. To measure the quality of service given to the cooperative members.
2. To help prioritize the handling of complaints in the cooperative.

2. CONTENT OF RESEARCH

2.1 Theoritical Basis

The theoretical basis is a collection of theories that became the basis of the development of Customer Relationship Management Information System in Koperasi Usaha Kita.

2.1.1 *Customer Relationship Management*

CRM is a strategy business that use information technology to produce companies that are competent, trustworthy and integrated with Members by the Members so that all processes and interactions with Members help maintaining and improving profitable relationships. CRM is a dynamic process governs the relationship between the Member with the company so that the Members can choose to continue the mutually beneficial commercial relations and to anticipate that this relationship does not become unprofitable companies.

2.1.2 TOPSIS Method (Technique For Others Preference by Similarity to Ideal Solution)

TOPSIS method is one of multiple criteria decision making method that was first introduced by Yoon and Hwang in 1981. This method is one of many methods used to solve practical decision-making. TOPSIS have a concept whereby the selected alternative is the best alternative that has the shortest distance from the positive ideal solution and the farthest distance from the negative ideal solution [7]. Increasing number of factors that must be considered in the decision making process, the more relatively difficult also to take a decision on an issue. Moreover, if the decision-making efforts of a particular problem, in addition to considering various factors / criteria diverse, it also involves some decision makers. Problems are thus known to the problems of multiple criteria decision making (MCDM). In other words, MCDM also be referred to as a decision to choose the best alternative from a number of alternatives based on certain criteria. TOPSIS method is used as an attempt to solve the problems of multiple criteria decision making. This is due to the concept is simple and easy to understand, computationally efficient and has the ability to measure the relative performance of the alternatives decision.

2.1.2.1 Stages in TOPSIS Method

1. Normalizating Matrix of Decision.
2. Make a normalized Weighted Decision Matrix
3. Determine the matrix solution idealized positive and negative ideal solution matrix
4. Determine the distance between the value of each alternative with the ideal solution matrix positive and negative ideal solution matrix
5. Determining the value of a preference for each alternative

2.1.2.2 Steps in TOPSIS Method

Steps undertaken to resolve a problem using TOPSIS method is as follows [8]:

1. Describe the alternatives (m) and the criterion (n) into a matrix, where X_{ij} is the choice of an alternative measure to-i and criteria j.Matriks all of this can be seen in the 1's equation.

$$D = \begin{bmatrix} X_{11} & X_{12\ldots} & X_{13} \\ X_{21} & X_{22\ldots} & X_{23} \\ X_{i1} & X_{i2\ldots} & X_{i3} \end{bmatrix} \quad (1)$$

2. Make a decision matrix R is a matrix of values normalized Every rij normalization can be done by calculation using the 2's equations.

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{m} x_{ij}}} \quad (2)$$

3. Creating a matrix weighting on the normalized Once normalized, each column of the matrix R multiplied by the weights (wj) to generate a matrix on 3's equations.

$$D = \begin{bmatrix} W_1 r_{11} & W_1 r_{12} & W_n r_n \\ W_2 r_{21} & \ldots & \ldots \\ W_j r_{m1} & W_j r_{m2} & W_j r_{mm} \end{bmatrix} \quad (3)$$

4. Determining the value of a positive ideal solution and negative ideal solution. The ideal solution is denoted A +, while the negative ideal solution denoted A-. The equation for determining the ideal solution can be seen in

4's equations.

$A+ = \{(\max V_{ij} \mid j \in J), (\min V_{ij} \mid j \in j'), i = 1,2,3,\ldots,m\} = V_1 + V_2 + ,\ldots ,V_n+\}$

$A- = \{(\max V_{ij} \mid j \in J), (\min V_{ij} \mid j \in j'), i = 1,2,3,\ldots,m\} = V_1 - V_2 - ,\ldots ,V_n -\}$

$J = \{j= 1,2,3,\ldots,n$ dan j merupakan *benefit criteria* $\}$

$J' = \{j=1,2,3,\ldots,n$ dan j merupakan *cost criteria*$\}$

5. Calculating separation measure. Separation of this measure is measuring the distance of an alternative to the positive ideal solution and the ideal solution negative.
- Calculation of positive ideal solution can be seen in the 5's equations:

$$S_i^+ = \sqrt{\sum_{i=1}^{n}(V_{ij} - V_j +)^2} \qquad (5)$$

Dengan i =1,2,3,...,m

– Calculation of the negative ideal solution can be seen in 6's equations:

$$S_i^+ = \sqrt{\sum_{i=1}^{n}(V_{ij} - V_j -)^2} \qquad (6)$$

Dengan i =1,2,3,...,m

6. Calculating the value of preference for each alternative. To determine the ranking of each alternative are there then needs to be calculated in advance the value of preferences will of each alternative. The calculation of the value of preferences can be seen through 7's equations.

$$C_i+ = \frac{S_i^-}{S_i+ + S_i^-} \qquad (7)$$

Dimana $0 < C_i+ < 1$ dan i=1,2,3,...,m

Having obtained the value of Ci +, then alternatives can be ranked based on the sequence Ci +. From the results of this ranking can be seen best alternative is an alternative that has the shortest distance from the ideal solution and is furthest from the negative ideal solution.

2.1.3 Service Quality

Service quality (quality of service) is a measure of how well a service to meet a match in the hope of Members. Implementation of the quality of service means making compromises in hopes of Members in a manner that is consistent. [9]

There are several steps to implement quality of service measurement system using the method Servqual information, is [3]:

Step 1: Determine the attributes of a dimension to be measured.

The variable is a concept that has a variation in value. The attributes will be measured to determine the quality of service by using servqual is hala matters relating to the dimensions of tangibles, reliability, responsiveness, assurance, empathy.

Step 2 : Creating and spreading questionnaire

Questionnaire design is done with the institute to the variables and dimensions have been determined. Furthermore, the questionnaire distributed directly to the respondents selected by taking into account the characteristics and sampling methods in accordance with the conditions of the field.

The minimum sample taken from a questionnaire-type correlation study, the minimum sampling included 30 subjects or respondents.

Questionnaires According to Hope from Member Services

This questionnaire is also called the questionnaire expectations (expectations). Members can fill in the questionnaire based on the desired expectations in the services provided.

Questionnaires Services based Real Work

This questionnaire is also called the perception questionnaires. This questionnaire is based on charging Members who see and feel the real performance of the service provided.

Step 3: Process the data the questionnaire.

Data from questionnaires prior to analysis done editing process and then do the tabulation process and the results are presented in tabular form. Further processing results can be processed using statistical models.

Value Performance Index (VPI) Member Satisfaction

Determining an average score of execution or satisfaction level and the level of interest (expectations). Determining which is the average of the average score of the satisfaction level of all the factors or attributes and *Y* which is an average of the scores level factors that affect the interests of all Member satisfaction. As seen in the 8's equation.

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$$\text{VPI satisfaction attribute i} = \frac{\sum(\text{Nj. Xi})}{\sum k} \qquad (8)$$

Which :

Nj = valuation for each 1 question variable

Xi = Likert Scale (1,2,3,4,5)

K = Responders number

Step 4: Analyze the data processing results of questionnaires

The results of the analysis of the processing of the questionnaire is a target that would be the purpose of achieving the level of quality of existing information systems. The end result can be expressed in a numerical value that reflects the interests of the variables and dimensions on customer satisfaction performance . Determination of the value of these results are based on the gap between expectations and

satisfaction received today. Value negative gap means a lower than expected.

Processing of the data gap using a calculation formula as follows:

SERVQUAL = SCORE P – SCORE E (9)

Which :

P = Members perceptions about the satisfaction felt training events

E = Members expectations

According to the SERVQUAL using a Likert scale, where a score of negative (-) means less training or the quality is not good (participant is not satisfied). If the SERVQUAL score is equal to zero (0) means good quality services (participants are satisfied). If the score SERVQUAL positive (+) means that the quality of service was excellent (Member extremely satisfied)..

2.2 CRM Framework Analysis in Koperasi Usaha Kita

CRM Framework that will be used in the development of Customer Relationship Management Information System in Koperasi Usaha Kita are Dynamic CRM. Described that phase of CRM within a framework in the form of a series of processes consisting of Acquisition-Retention-Expansion. As an integrated CRM framework and based on the types of information regarding the Members are arranged in multistage,

The phase of the CRM Framework and facilities that are described in the following picture:



Figure Error! No text of specified style in document..**1 Phase of CRM Framework**

then the processes or activities that are in the stages of the Framework of dymanic CRM is as follows:

1. Acquisition

In this phase will be an interesting process to Members (members of the cooperative) or on a new stage of development referred to Acquire CRM. This stage is a stage that will be used to attract prospective members of the Koperasi Usaha Kita are so keen to engage in cooperative savings and loan. The following is a facility that will be built in phases Acquire:

a. Information Cooperative

At this facility will be explained about all the information about the Koperasi Usaha Kita are to facilitate the Members and prospective members know and get information about the cooperative.

b.Promosi

At this facility will be explained about promotions offered by the cooperative to members in the form of services and other cooperative programs.

2. Retention

In this phase will be the process of improving the relationship between members of the cooperative or at the development stage is called Retain CRM. This stage is a stage that will be used to improve the relationship between cooperative members. The following is a facility that will be built in phases retain:

a. Service Quality

At this facility will be the process of measuring the quality of the services performed by distributing questionnaires to members reached the stage of calculation results from questionnaires member. Of the division of the questionnaire obtained data regarding the respondents' assessment. This research data collection is done by distributing questionnaires to members of the cooperative research. Each member must fill in the questionnaire truthfully about the assessment of the cooperative's services.

Member satisfaction level will make a point of being present in the Cartesian diagram. Value Performance Index (VPI) member satisfaction levels obtained by finding the average score of the level of satisfaction of an attribute. Calculations performed by the equation (6).

Table Error! No text of specified style in document..**1 NIK Member satisfaction based Rate Expectations**

No	Pernyataan	Jumlah Responden yang Memilih (orang)					NIK
		1	2	3	4	5	
1	Fasilitas (kenyamanan dan kebersihan ruangan pelayanan)	0	0	3	22	5	4,30
2	Ketersediaan alat yang memadai dalam pelayanan	0	0	8	18	4	3,97
3	Kerapihan berpakaian pegawai	0	0	9	15	6	3,82
4	Memberikan pelayanan secara akurat dan handal	0	0	12	14	4	3,68
5	Penyampaian informasi dilakukan secara konsisten (tidak berubah-ubah)	0	0	10	13	7	3,86
6	Pelayanan diproses secara cepat	0	0	5	19	6	4,00
7	Pegawai menguasai dan mengerti akan proses pelayanan	0	0	10	15	5	3,79
8	Pegawai memberikan pelayanan secara ramah	0	0	8	19	3	3,79
9	Pegawai memberikan pelayanan secara sopan	0	0	11	13	6	3,75
10	Terbukanya komunikasi antara pegawai dan anggota koperasi	0	0	9	15	6	4,18
11	Proses pelayanan memudahkan anggota koperasi	0	0	8	16	6	3,89
		total seluruh					42,83
		Rata-rata keseluruhan					3,89

Table 3.6 NIK Member Satisfaction by Rating Reality

No	Pernyataan	Jumlah Responden yang Memilih (orang)					NIK
		1	2	3	4	5	
1	Fasilitas (kenyamanan dan kebersihan ruangan pelayanan)	0	1	19	10	0	3,32
2	Ketersediaan alat yang memadai dalam pelayanan	0	3	19	8	0	3,18
3	Kerapihan berpakaian pegawai	0	0	17	8	5	3,64
4	Memberikan pelayanan secara akurat dan handal	0	4	22	4	0	3,11
5	Penyampaian informasi dilakukan secara konsisten (tidak berubah-ubah)	0	5	12	10	3	3,36
6	Pelayanan simpan-pinjam diproses secara cepat	0	11	14	5	0	2,79
7	Pegawai menguasai dan mengerti akan proses pelayanan simpan-pinjam	0	5	14	8	3	3,29
8	Pegawai memberikan pelayanan secara ramah	0	6	19	5	0	2,96
9	Pegawai memberikan pelayanan secara sopan	0	5	18	6	1	3,11
10	Terbukanya komunikasi antara pegawai dan anggota koperasi	0	10	18	2	0	2,75
11	Proses pelayanan memudahkan anggota koperasi	0	15	14	1	6	2,57
		total seluruh					34,87
		Rata-rata keseluruhan					3,17

The following information is an explanation of the calculation of NIK satisfaction ratings based on expectations as Table 3.5 and calculation of NIK satisfaction ratings based on real performance as Table 3.6 using Likert assessment scale.

Furthermore NIK processed to find the gap every question. Processing of the data gap using a calculation equation 9.

According to the model SERVQUAL using a Likert scale, where a score of negative (-) means less training or the quality is not good (participant is not satisfied). If the SERVQUAL score is equal to zero (0) means good quality services (participants are satisfied). If the score SERVQUAL positive (+) means that service quality is very good (the participants were very satisfied).

Each grain of each dimension has a different Gap. Table 3.7 illustrates the data from each of the questions.

Table 3.7 Ratings of Cooperative Member to the satisfaction and Expetation Members

No	Pertanyaan	Harapan	Kenyataan	Gap Yang Muncul
1	Fasilitas (kenyamanan dan kebersihan ruangan pelayanan)	4,30	3,32	-0,98
2	Ketersediaan alat yang memadai dalam pelayanan	3,97	3,18	-0,79
3	Kerapihan berpakaian pegawai	3,82	3,64	-0,18
4	Memberikan pelayanan secara akurat dan handal	3,68	3,11	-0,57
5	Penyampaian informasi dilakukan secara konsisten (tidak berubah-ubah)	3,86	3,36	-0,50
6	Pelayanan simpan-pinjam diproses secara cepat	4,00	2,79	-1,21
7	Pegawai menguasai dan mengerti akan proses pelayanan simpan-pinjam	3,79	3,29	-0,50
8	Pegawai memberikan pelayanan secara ramah	3,79	2,96	-0,82
9	Pegawai memberikan pelayanan secara sopan	3,75	3,11	-0,64
10	Terbukanya komunikasi antara pegawai dan anggota koperasi	4,18	2,75	-1,43
11	Proses pelayanan memudahkan anggota koperasi	3,89	2,57	-1,32

The data analysis results of the questionnaire can be seen from the percentage of participants' satisfaction on the quality of service. This participant satisfaction percentage can be calculated using the formula:

$$T_{ki} = \frac{X_i}{Y_i} x\ 100\%$$

where:

T_ki= level of Compliance

Xi = Performance assessment score (Reality)

Yi = Interest assessment score (Hope)

No	Pertanyaan	Harapan	Kenyataan	Presentase Kepuasan
1	Fasilitas (kenyamanan dan kebersihan ruangan pelayanan)	4,30	3,32	77%
2	Ketersediaan alat yang memadai dalam pelayanan	3,97	3,18	80%
3	Kerapihan berpakaian pegawai	3,82	3,64	95%
4	Memberikan pelayanan secara akurat dan handal	3,68	3,11	84%
5	Penyampaian informasi dilakukan secara konsisten (tidak berubah-ubah)	3,86	3,36	87%
6	Pelayanan simpan-pinjam diproses secara cepat	4,00	2,79	70%
7	Pegawai menguasai dan mengerti akan proses pelayanan simpan-pinjam	3,79	3,29	87%
8	Pegawai memberikan pelayanan secara ramah	3,79	2,96	78%
9	Pegawai memberikan pelayanan secara sopan	3,75	3,11	83%
10	Terbukanya komunikasi antara pegawai dan anggota koperasi	4,18	2,75	66%
11	Proses pelayanan memudahkan anggota koperasi	3,89	2,57	66%
	Rata – Rata Presentase Kepuasan			79%

then from the calculation of the average percentage of satisfaction obtained with 79% it can be concluded that the level of satisfaction hopes members approached members to services provided by the cooperative. This achievement can be measured and cooperative evaluation of materials in order to maintain a good service even able to increase it as a form of service efforts for their members.

3. Expansion

In this phase will be the process of maintaining fixed Members or at the development stage called the Enchange CRM. This stage is a stage that will be used to maintain the permanent members in the Koperasi Usaha Kita. Here is a facility that will dibangung in phase Enchange:

a. Keluhan

At this facility for every member Members can submit a complaint online by categories of complaints and grievances level, so that the incoming complaints can be directly processed by the owner of the Company. Member For each complaint received will go through the process of complaints handling priority, where each complaint will be calculated its weight so it can be sorted based on the criteria specified, in this case the sorting complaint would use the decision support system.

Basically, these steps include the TOPSIS method:

1. Describe the alternatives (m) and the criterion (n) into a matrix, where Xij is the choice of an alternative measure to-i and criteria j.Matriks all of this can be seen in the equation with the weight and the following criteria:

Table 3. Error! No text of specified style in document. **Indicators and Criteria Complaints**

KRITERIA	PROSEDUR	KETIDAKSESUAIAN	PENGELOLAAN
BOBOT	35%	35%	30%

Giving the value of benefits based on the priority categories of complaints.

Table Error! No text of specified style in document**..4 Alternative Table**

simpan pinjam	78	85	85
thr	87	77	75
uang titipan	82	98	77
SHU	98	95	70

2. Making matrix R is a decision matrix normalized Every rij normalization of values can be done by calculation using the two equations.

Table Error! No text of specified style in document**..5 Normalized matrix Table**

R=			
	0,4505	0,4768	0,5524
	0,4905	0,4410	0,5047
	0,4686	0,5302	0,5147
	0,5354	0,5184	0,4790

3. Making weighting on the normalized matrix After normalize, each column of the matrix R multiplied by the weights (wj) to generate a matrix on three equations.

Table 3.6 Weighted normalized Matrix Table

Y=			
	0,1577	0,1669	0,1657
	0,1717	0,1543	0,1514
	0,1640	0,1856	0,1544
	0,1874	0,1814	0,1437

4. Determining the value of a positive ideal solution and negative ideal solution. The ideal solution is denoted A +, while the negative ideal solution denoted A-. The equation for determining the ideal solution can be seen in the four equations

Table 3.12 The table Calculates distance Ideal Solution Positive and Negative

A+	Solusi ideal Positif	0,1577	0,1543	0,1437
A-	Solusi ideal Negatif	0,1874	0,1856	0,1657

5. Calculate the separation measure. Separation of this measure is a measurement of the distance of an alternative to the positive ideal solution and negative ideal solution.

- Calculation of positive ideal solution can be seen in the five equations:
- Calculation of the negative ideal solution can be seen in six equations:

Table 3.13 The table Calculates distance Ideal Solution Positive and Negative

Jarak antara alternatif dengan solusi ideal positif		Jarak antara alternatif dengan solusi ideal positif	
D1+	0,1448	D1-	0,1804
D2+	0,1529	D2-	0,1906
D3+	0,1565	D3-	0,1877
D4+	0,1712	D4-	0,2012

5. Calculating the value of preference for each alternative. To determine the ranking of each alternative are there then needs to be calculated in advance nilaipreferensi of each alternative. The calculation of the value of preferences can be seen through seven equations. From the results of this ranking can be seen best alternative is an alternative that has the shortest distance from the ideal solution and is furthest from the negative ideal solution.

Table Error! No text of specified style in document**..2 Ranking Table**

Nilai referensi untuk setiap alternatif	
V1	0,5549
V2	0,5548
V3	0,5454
V4	0,5402

Thus, complaints concerning savings and loans will be given priority to be addressed.

Table Error! No text of specified style in document**..3 Table Perangkingan**

Nilai referensi untuk setiap alternatif	
Simpan-Pinjam	0,5549
THR	0,5548
Uang Titipan	0,5454
SHU	0,5402

2.3 Database Analysis

In the development of a CRM system requires a database design, modeling which will be used in the design of this database menggunanan Entity Relational Diagram (ERD). Database modeling can be seen in Figure 3.3

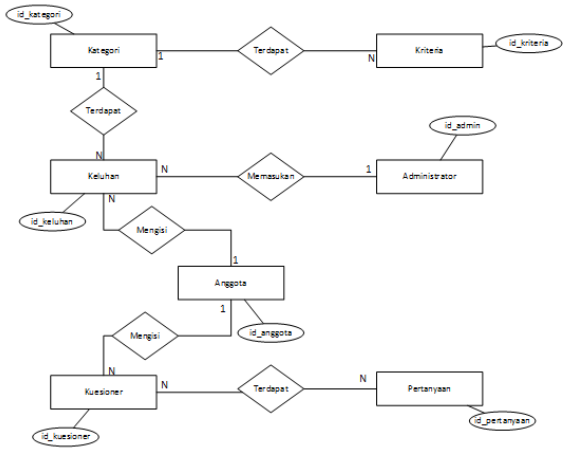


Figure Error! No text of specified style in document..**2 ERD**

2.4 Data Flow Diagram

Data flow diagrams show how the flow of data and outlines the processes that occur in the system to process more detail. In the context diagram in Figure 3.14 information system can be broken down into several DFD.

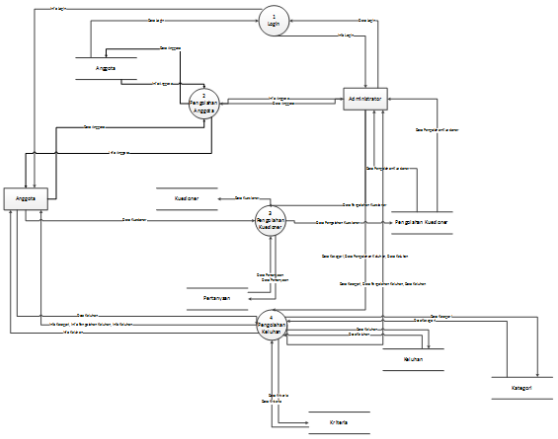


Figure 3.14 DFD Level 1

2.5 designing Interfaces

The design of the interface is made to describe the view that the program used by the user or the user to interact with the system to be created. The design is based on the interface display both input and output that will be generated when the application is implemented. Here is the information system interface design quality of service measurement and priority handling of complaints using CRM approach at Koperasi Usaha Kita.

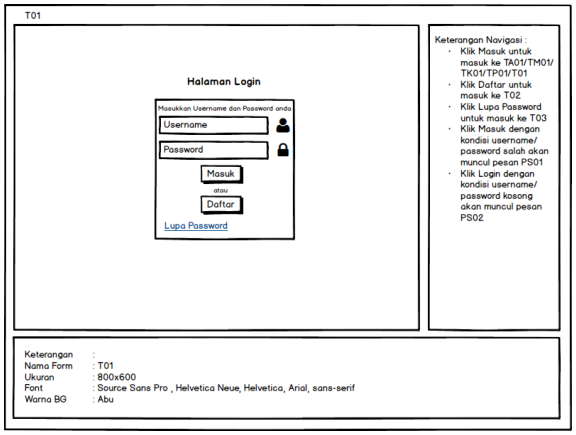


Figure 3.8 Login Interface Design

2.6 System Testing

Testing of the system is the cornerstone that aims to find errors or omissions in the information system under test. System testing is to determine the performance of information systems that have been made in accordance with the purpose of information system design. Testing the system uses black box testing. Black box testing focuses on functional requirements of software and user acceptance testing (end users).

2.6.1 Fungsional Testing

Black box testing focuses on functional requirements of software built. Scenario testing CRM information system in Cooperative Enterprises We performed on each part can be seen in Table 4.11.

Table 4.11 Testing Scenario

Nama Fungsional Pengujian	Detail Pengujian	Jenis Pengujian
Login	Login User	Black Box
Lupa Password	Lupa Password User	Black Box
Pengolahan Anggota	Penambahan Data Anggota Pengeditan Data Anggota	Black Box
Pengolahan Jenis	Penambahan Data Jenis Pengeditan Data Jenis	Black Box
Pengolahan Kualitas Layanan	Penambahan Data Kuesioner Pengeditan Data Kuesioner Pengisian Data Kuesioner	Black Box
Pengolahan Keluhan	Penambahan Data Kriteria Pengeditan Data Kriteria Penambahan Data Sub Kriteria Pengeditan Data Sub Kriteria Penambahan Data Keluhan Pengeditan Data Keluhan	Black Box

2.6.2 User Acceptance Testing (End Users)

User acceptance testing (end users) focused on testing for the process to be performed by the user as well as the assessment of the system to be used. At this stage the system will be through the user acceptance test test scenarios and end user acceptance after the system is implemented in a corporate environment.

2.6.2.1 User Acceptance Test (UAT) Scenario

The new application is built to be tested for compliance and reliability through the test UAT (user acceptance test) as a condition that the application has to be accepted by the user / consumer. UAT can be said as a test of finding defects (defects) that can not be found by the developer. The testing process involves prospective users of new applications will be made by the owner of the company in Cooperative Enterprises Kita. The test scenario can be seen in Table 4.25

Table 4.25 User Acceptance Test Scenario

No	Deskripsi Pengujian	Prosedur Pengujian
1	Pengujian Login Anggota	•Klik menu Login •Masukkan username dan password •Tekan tombol Masuk
2	Pengujian Login Admin	•Klik menu Login •Masukkan username dan password •Tekan tombol Masuk
3	Pengujian Penambahan Data Anggota	•Klik menu Daftar •Masukkan username, email, password, ulangi password dan capctha •Tekan tombol Daftar Baru
4	Pengujian Pengeditan Data Anggota	•Klik menu Profil •Edit atribut yang akan diubah untuk username, email, status, kontribusi, jenis Anggota, no hp, alamat dan sumber •Tekan tombol edit
5	Pengujian Penambahan Data Kuesioner	•Masukkan pertanyaan baru atau pilih pertanyaan lalu tekan tombol Tambah •Pilih pertanyaan yang akan ditambah sub pertanyaannya •Masukkan jawaban dari pertanyaan yang dipilih lalu tekan tombol Tambah •Tekan tombol Simpan
6	Pengujian Pengeditan Data Kuesioner	•Pilih kuesioner yang akan diubah lalu tekan tombol Lihat •Edit atribut yang akan diubat untuk layanan, status, pertanyaan dan sub pertanyaan •Tekan tombol Edit
7	Pengujian Pengisian Data Kuesioner	•Pilih kuesioner yang akan diisi lalu tekan tombol Ikut •Jawab semua pertanyaan •Tekan tombol Simpan Hasil Kuesioner
8	Pengujian Pengeditan Data Kriteria	•Pilih kriteria yang akan diedit lalu tekan tombol lihat •Edit atribut yang akan diubah untuk nama Kriteria, bobot relasi •Tekan tombol Edit
9	Pengujian Pengeditan Data Sub Kriteria	•Pilih sub kriteria yang akan diedit lalu tekan tombol lihat •Edit atribut yang akan diubah untuk nama sub kriteria, nama kriteria, bobot relasi •Tekan tombol Edit
10	Pengujian Penambahan Data Keluhan	•Masukkan jenis keluhan, sifat keluhan, dan ist keluhan •Tekan tombol kirim
11	Pengujian Pengeditan Data Keluhan	•Pilih keluhan yang akan diedit lalu tekan tombol lihat •Edit atribut yang akan diubah untuk status dan isi tanggapan keluhan •Tekan tombol Simpan

Based on the results of the test user acceptance test has been done on the CRM information system in Cooperative Enterprises We may conclude that the system must first be repaired on additional testing of the questionnaire data according to records provided by the user before entering the stage of the final user acceptance.

2.6.2.2 Scenario End User Acceptance Once the system is implemented in the Corporate Environment

In this type of test, the software will be delivered to the user to determine whether the software meets the expectations of users and works as expected. Users will conduct an assessment of the system using interviews addressed to the Administrator and Members with questions based on the purpose of research. So the questions become clear and focused.

Based on the responses from users of CRM information system regarding user acceptance testing after the system is implemented in a corporate environment, it can be concluded that the CRM information system that has been built can be seen in Table 4:34.

Table 4.34 Conclusion User Acceptance Testing

Pengguna	Kesimpulan
Administrator	1. Dapat membantu pemilik perusahaan dalam menentukan proritas penanganan keluhan Anggota 2. Sistem sudah cukup bagus pada penangan keluhan namun tidak dapat membuat kriteria baru 3. Tampilan dan penggunaan bahasa pada sistem sudah cukup baik
Anggota	1. Pada proses mengirim keluhan Anggota dapat dikatakan mudah 2. Bahasa yang digunakan pada sistem cukup bagus 3. Sistem sudah cukup baik dan mudah untuk digunakan oleh Anggota

3 CONCLUTION

Based on test results and discussion that has been created it can be concluded that the information system is the measurement of the quality of service and priority handling of complaints approach CRM can help cooperatives in the process of measuring the quality of service in the Koperasi Usaha Kita and can assist the cooperative in determining the priority handling of complaints member.

As for suggestions that could be given to the development of systems that have been created for the development of further system that criteria on priority complaints handling can be added and removed, so that the attribute criteria is more diverse and information system measuring the quality of service and priority handling of complaints approach this CRM can be developed with the addition of a notification menu on cooperatives. So that members can find any announcement issued periodically cooperative

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