

MARKET EXCHANGE ANALYSIS FOR DETERMINING MARKETING AND PRODUCT DETERMINATION AREAS WITH CUSTOMER RELATIONSHIP MANAGEMENT (CRM) APPROACH TO PT MATOA INDONESIA DIGDAYA

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ABSTRACT

This research was conducted at PT Matoa Indonesia, according to the results of an interview with Mr Doni Mardian as *Manager Marketing*, there are currently several customers at PT Matoa Indonesia Digdaya who are scattered not only in Bandung. Based on the spread of customers in several cities and the achievement of PT Matoa Digdaya's Vision and Mission to introduce its products more broadly, the company wants to expand its marketing area. Another problem arises in the product problem, according to PT Matoa Indonesia Digdaya product sales data attached, of the 15 types of products available, only 2 products are often purchased by customers, namely Matoa Mori and Matoa Kaili, even though the products at PT Matoa Indonesia are Power not only has 2 kinds of products. Based on the interview with Mr. Doni Mardian as *Manager Marketing* stated that the company is difficult in determining the location of errors in the marketed products so that the sale of products becomes minimal. Then this system is needed with approach *Customer Relationship Management* that can help *Marketing* in determining marketing areas and determining products according to customer wishes Based on the results of testing *blackbox*, *user accepted test* (UAT) and interviews it can be concluded that this system has helped the department *marketing* in determining new marketing areas and product determination

Keywords: *Customer Relationship Management*, Market Share, Customer Desires, Products, Marketing

1. INTRODUCTION

PT Matoa Indonesia Digdaya is a company that manufactures watches made of wood and is also the first company in the city of Bandung to produce wooden clocks. Until now PT Matoa Indonesia Digdaya has produced 15 types of watches with 10 types of watches with favorite editions and 5 types of limited edition watches. Since 2012 PT Matoa Indonesia has been empowered to market its

products in the city of Bandung, usually to introduce its products outside the city of Bandung PT Matoa Indonesia Digdaya only participates in *existing events* bazaars such as to introduce *brand* existing local. Apart from these methods, marketing is done through social media such as *Instagram* or *Facebook*.

According to the interview with Mr. Don as *Manager Marketing*, said that there are currently several customers at PT Matoa Indonesia Digdaya who are scattered not only in Bandung, for example in Jakarta there are 250 customers, Medan 59 customers, Denpasar 72 customers, Surabaya 55 customers and others (Attached to the Appendix F). Based on the spread of customers in several cities in PT Matoa Indonesia Digdaya to introduce their products more broadly, the company wants to expand its marketing area in accordance with the main goal of CRM is to retain old customers and attract new customers, but the company does not see the market potential to expand its marketing area, because it is this company that does nothing to expand the marketing of its products. This results in companies promoting to regions where market opportunities are not known so that the company's opportunity to obtain sales conversions is minimal, which is attached to Appendix F. If the company does not take into account the size of the market opportunity, there will be a possibility that the market the company is not right on target and sales conversions are minimal.

The purpose of this research is to build an information system for determining the marketing area and product determination with the approach *Customer Relationship Management* at PT Matoa Indonesia Digdaya. While the purpose of this research is to help the Department *Marketing* in determining marketing areas that have high market opportunities and help *Marketing* in determining new products based on the wishes of customers.

2. BASIS OF THEORY

2.1 Customer Relationship Management

Customer Relationship Management or what is commonly called customer relationship management is or also an understanding of CRM is how a company or a business knows the behavior or desires of customers, customer needs and then builds and implements a better business transaction to improve capabilities *acquisition* new customer and increase the ability to safeguarding existing customers [1]

2.2 Stages of CRM

CRM has 3 stages, namely

1. *Acquire*, is the process of obtaining new customers,
2. *Enhance*, is process Increasing profits from existing customers The company also strives to establish good relationships with its customers
3. *Retain* is a way to retain customers by providing benefits, by following what is needed by customers and what customers want

2.3 Dynamic CRM

"A framework of dynamic CRM ". This framework explains the stages in developing / implementing CRM. Can be seen in Figure 1. Information that is the focus of attention is information about customers, information for customers and information by customers

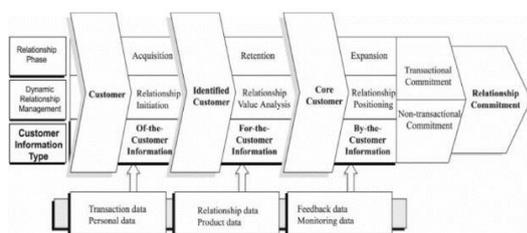


Figure 1. Dynamic CRM Framework

In the above framework illustrated that there are three types of customer information (*Customer Information*), among others [11]:

1. *Of-the-Customer Information* (customer information)
2. *For-the-Customer Information* (information for customers). This information can be channeled through various communication media in the form of *direct mail*, *auto response systems*, and internet sites.
3. *By-the - Customer Information* (information by customers) information *feedback* Non-transactional from customers and others.

2.4 Market Segmentation Market segmentation

is an attempt to separate markets in groups of buyers according to certain types of products and with certain marketing mixes [4] There are four segments of the consumer market, namely:

1. Geographical segmentation, which divides the market into different geographical units, such as countries, states, districts, cities or neighborhoods.
2. Demographic segmentation, which divides the market into several groups, for example by age, sex, family cycle, family income etc.
3. Psychographic segmentation, which divides the market into groups based on social class, lifestyle or characteristics

2.5 Product Differentiation

To clarify the identity of a company's products it must be designed differently from its competitor's products .. Especially for tangible products , then product differentiation can be carried out in the following dimensions [5]

- a. Form and Design, this includes the size and structure of the product.
- b. Performance Quality, this includes the level of quality, whether the quality is low, medium or high.
- c. Comfort Quality, this includes the level of comfort in use, if the product of the company is comfortable to use by the customer it will increase customer loyalty to the company
- d. Durability, this includes the age of a product that can be used for a long time or not and also durability from a product

2.6 Decision Support Systems Decision

support systems (SPK) are needed to support the solution of an application problem

2.6.1 Simple Additive Weight (SAW)

Simple Additive Weight (SAW) is a weighted sum method. The basic concept of the SAW method is to find weighted sums from the performance rating on each alternative on all criteria [8]. The SAW method is the process of normalizing the decision matrix (X) to a scale that can be compared with all available alternative ratings

3. RESEARCH METHODS

The research method is the process used during the research, where everything should be done. The method used is a method of quantitative analysis.

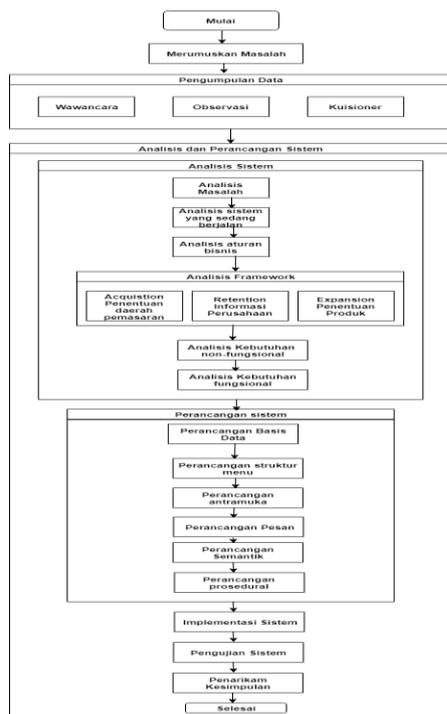


Figure 1 Research Flow

3. RESULTS AND DISCUSSION

3.2 Problem

Analysis Analysis of the problem of the system that is running is How to build a system that can help determine the marketing area that has high market opportunities and helps in determining the products according to customer desires.

3.2.1 Framework Analysis The CRM

Framework CRM illustrates that the CRM phase in a framework is a series of processes consisting of stages of Aquition, Retention, and Expansion. Then the processes or activities that are in the stages of the Framework of Dynamic CRM are as follows

3.2.1.1 Stage This acquisition

phase will be a process to attract new customers or at the stage of CRM development called *Acquire*. This stage is the stage used to attract the interest of new prospective customers of PT Matoa Indonesia Digdaya so that they are interested in conducting transactions with companies. As for facilities built in the phase *acquisition* to attract new customers are:

- a. Display new marketing area information.

3.2.1.1.1 Analysis of Market Share for Determiration of Marketing Areas The

purpose of analyzing market share is to find out the market potential in several cities spread in West Java, Bali and Sumatra to products from PT Matoa Indonesia Digdaya. To find out the market share, there are 2 stages

1. Analysis of Customer Data by City

The first stage of *relationship initiation* is to do

customer analysis based on customer data in 2017.

Table 1

No	Kota	Number of Customers
1	Bandung	763
2	Jakarta	250
3	Denpasar	72
4	Medan	59
5	Surabaya	55
6	Yogyakarta	52
7	Bogor	46
8	Tangerang	34
9	Bekasi	26
10	Jambi	13
11	Cianjur	10
12	Lampung	9
13	Cirebon	8
14	Cimahi	7
15	Padang	6

2. Market

a. Segmentation Geographic Market

Segmentation This segmentation is done by dividing the market into geographical units different, such as cities and districts or the surrounding environment. In the research at PT Matoa Indonesia Geographical segmentation was carried out based on the distribution of geographical areas in several cities spread across Java, Bali and Sumatra

1. Segmentation based on the City This segmentation was grouped by City in order to find out market share based on the
2. Segmentation based on the Shopping Center Segmentation the number of shopping centers in several cities spread across Java, Bali and Sumatra.
3. Segmentation based on distribution this segmentation is grouped based on the number of clothing and shoe distributions in several cities spread across Java, Bali and Sumatra.

b. Demographic Market

Segmentation Segmentation by age group

1. For segmentation based on age necessary because this Matoa product is quite expensive and needs care for this product that is impossible to hold by children under the age of 15 years, then the segmentation is sampled at the age of 15-39

2. Segmentation is based on the magnitude of an economic activity

For segmentation based on the size of an economic activity, it is necessary because the products marketed by Matoa are quite expensive

3. Case Analysis

Table 2 Results of Market Share Analysis

No	City	Percentage =
1	City Surabaya	59%
2	Kota Lampung	11.7
3	Kota Jakarta	9.75%
4	Kota Padang	3.53
5	Kota Bekasi	3.37
6	Kota Cianjur	3.36
7	Kota Tangerang	2.51
8	Kota Medan	2.41
9	Kota Denpasar	1.04
10	Kota Bogor	1%
11	Kota Jambi	0.75
12	Kota Cimahi	0.72
13	Kota Yogyakarta	0.47
14	Kota Cirebon	0.39

4. Conclusion

Based on the results of the calculation of market share percentage to get recommendations for determining the marketing area carried out on 5 cities in Java, Bali and Sumatra are:

1. SurabayaFirst
2. City Rank Lampung Second
3. City Rank JakartaThird
4. City Rank Padang Fourth
5. City Rank Bekasi City Fifth Level

Next will be done selection of alternatives from the City based on the results already done what's wrong

5. MarketTargetting

Market Targetting is done to adjust recommendations from market opportunities that have been carried out at the segmentation stage with the target set by the Marketing Section. then it is necessary to hold a decision-making system that is used is the method of *Simple Additive Weighting* (SAW).

The city / regency ranking process is the

- a. equation formula used for the calculation of SAW(*Simple Additive Weighting*) taken from the formula number (4):
- b. Providing Data to be analyzed The data used is adjusted to the needs of the company namely data on market share, number of shopping centers and data modern market.

Table 4 Data to be analyzed

No	City	Number of Shopping Centers	Number of Distros	Market Market Value
1	Kota Surabaya	33	10	59%
2	Kota Lampung	27	25	11.7%
3	Kota Jakarta	59	31	9.75%
4	Kota Padang	10	1	3.53
5	Kota Bekasi	20	7	3.37
6	Kota Cianjur	1	5	3.36
7	Kota Tangerang	11	5	2.51
8	Kota Medan	11	102	2.41
9	Kota Denpasar	13	31	1.04
10	Kota Bogor	13	7	1%
11	Kota Jambi	10	7	0.75
12	Kota Cimahi	5	4	0.72
13	Kota Yogyakarta	12	65	0.47
14	Kota Cirebon	10	11	0.39

c. Change the data into Form X Matrix

After getting the data to be analyzed, then the data is converted into the form of an X matrix using the original data based on the formula number (1). Below is the result of the X matrix equation with the original data

The results of the X matrix equation with the original data input

$$X = \begin{pmatrix} 33 & 10 & 59 \\ 27 & 25 & 11.7 \\ 59 & 31 & 9.75 \\ 10 & 1 & 3.53 \\ 20 & 7 & 3.37 \\ 1 & 5 & 3.36 \\ 11 & 5 & 2.51 \\ 11 & 102 & 2.41 \\ 13 & 31 & 1.04 \\ 13 & 7 & 1 \\ 10 & 7 & 0.75 \\ 5 & 4 & 0.72 \\ 12 & 65 & 0.47 \\ 10 & 11 & 0.39 \end{pmatrix}$$

d. Determining Criteria and Weight (W)

Determining criteria and weights carried out before doing the calculation. Criteria and weight values determined by the company can be seen in Table 5

Table 5 Criteria and Weight for Market Targetting

No	Criteria	Weight
1	Percentage of Market Share	50%
2	Number of Shopping Centers	25%
3	Number of distributions	25%

d. Determining the costs and benefits

Table 6 Determination of Cost and Benefit

No	Criteria	Cost	Benefit
1	Percentage of Market Share		√
2	Number of Shopping Centers		√
3	Number of distributions		√

c. Decision Matrix Perform Normalization

1. Criteria many shopping centers into the attribute advantage (*benefit*). The greater the value produced, the better.

$$\frac{33}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{33}{59} = 0.55$$

Value 0.55 for the calculation of Surabaya City

$$\frac{27}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{27}{59} = 0.45$$

Value 0.45 for calculation of Lampung City

$$\frac{59}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{59}{59} = 1$$

Value 1 for calculation of Jakarta City

$$\frac{10}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 11; 11; 5; 1)} = \frac{10}{59} = 0.16$$

Value 0.16 for the calculation of Padang City

$$\frac{20}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{20}{59} = 0.33$$

Value 0.33 for the calculation of Bekasi City

$$\frac{1}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{1}{59} = 0.01$$

Value 0.01 for the City of Cianjur

$$\frac{11}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{11}{59} = 0.18$$

Value 0.18 for calculation of Tangerang City

$$\frac{11}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{11}{59} = 0.18$$

Value 0.18 for calculation of Medan City

$$\frac{13}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{13}{59} = 0.22$$

Value 0.22 for the calculation of Denpasar City

$$\frac{13}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{13}{59} = 0.22$$

$$\frac{5}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{5}{59} = 0.08$$

Value 0.08 for the calculation of the City of Cimahi

$$\frac{12}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{12}{59} = 0.20$$

Value 0.20 for calculation of Yogyakarta City

$$\frac{10}{\text{Max}(59; 33; 27; 20; 13; 13; 12; 10; 10; 10; 11; 11; 5; 1)} = \frac{10}{59} = 0.16$$

0.16 Values for the calculation of Cirebon

So the conclusion from the above calculation with many criteria Shopping Center is highest value in Jakarta with a value of 1

2. criteria for the number of distributions into the attribute advantage (*benefit*). The greater the value produced, the better.

$$\frac{10}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{10}{102} = 0.09$$

Value 0.09 for calculation of Surabaya City

$$\frac{25}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{25}{102} = 0.24$$

Value 0.24 for calculation of Lampung City

$$\frac{31}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{31}{102} = 0.30$$

Value of 0.009 for calculation of Padang City

$$\frac{7}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{7}{102} = 0.06$$

Value 0.06 for the calculation of Bekasi City

$$\frac{5}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{5}{102} = 0.04$$

Value 0.04 for the calculation of Cianjur City

$$\frac{5}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{5}{102} = 0.04$$

Value 0.04 for calculation Kota Tangerang

$$\frac{102}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{102}{102} = 1$$

Value 1 for calculating Medan City

$$\frac{31}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{31}{102} = 0.30$$

Value 0.30 for calculation of Denpasar City

$$\frac{7}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{7}{102} = 0.06$$

Value of 0.06 for calculation of Bogor City

$$\frac{7}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{7}{102} = 0.06$$

Value 0.06 for calculation of City Jam bi

$$\frac{4}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{4}{102} = 0.03$$

Value 0.03 for calculation of Cimahi City

$$\frac{65}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{65}{102} = 0.63$$

Value 0.63 for calculation of Yogyakarta City

$$\frac{11}{\text{Max}(102; 65; 31; 31; 25; 11; 10; 7; 7; 7; 5; 5; 4; 1)} = \frac{11}{102} = 0.20$$

value 0.20 for the calculation of Cirebon

So the conclusion from the above calculation with the criteria of many distributions highest value contained in Medan with value 1

2.Kriteria magnitude percentage of market opportunities into the keuntungan attribute(*benefit*).The greater the value produced, it is considered the better

$$\frac{59}{\text{Max}(59; 11.7; 9.75; 3.53; 3.37; 3.36; 2.51; 2.41; 1.04; 1; 0.75; 0.72; 0.47; 0.39)} = \frac{59}{59} = 1$$

Value 1 for the calculation of Surabaya City

$$\frac{2.51}{\text{Max}(59; 11.7; 9.75; 3.53; 3.37; 3.36; 2.51; 2.41; 1.04; 1; 0.75; 0.72; 0.47; 0.39)} = \frac{2.51}{59} = 0.04$$

Value0.04 for calculation of Tangerang City

$$\frac{2.41}{\text{Max}(59; 11.7; 9.75; 3.53; 3.37; 3.36; 2.51; 2.41; 1.04; 1; 0.75; 0.72; 0.47; 0.39)} = \frac{2.41}{59} = 0.04$$

Value0.04 for the calculation of Medan City

$$\frac{1.04}{\text{Max}(59; 11.7; 9.75; 3.53; 3.37; 3.36; 2.51; 2.41; 1.04; 1; 0.75; 0.72; 0.47; 0.39)} = \frac{1.04}{59} = 0.02$$

Value of0.02 for calculation of Denpasar City

$$\frac{1}{\text{Max}(59; 11.7; 9.75; 3.53; 3.37; 3.36; 2.51; 2.41; 1.04; 1; 0.75; 0.72; 0.47; 0.39)} = \frac{1}{59} = 0.02$$

Value0.02 for calculation Bogor city. Then the conclusions from the above calculations with the criteria for the percentage percentage of the highest market opportunity value are in the city of Surabaya with a value of 1

e. Making the ranking process

Then the calculation can be seen as below:

$$V_1 = (0.25) (0.55) + (0.25) (0.09) + (0.50) (1) = 0.1375 + 0.0625 + 0.5 = 0.7$$

Value 0.7 for the calculation of Surabaya City
 $V_2 = (0.25) (0.45) + (0.25) (0.24) + (0.50) (0.20) = 0.1125 + 0.06 + 0.1 = 0.2725$
 Value of 0.2725 for calculation of Lampung City

$$V_3 = (0.25) (1) + (0.25) (0.30) + (0.50) (0.16) = 0.25 + 0.075 + 0.08 = 0.405$$

For the calculation of Jakarta City
 $V_4 = (0.25) (0.16) + (0.25) (0.009) + (0.50) (0.06) =$

$$0.04 + 0.002 + 0.03 = 0.072$$

Value 0.072 for the calculation of Padang City
 $V_5 = (0.25)(0.33) + (0.25)(0.06) + (0.50)(0.06)$
 $= 0.0825 + 0.015 + 0.03 = 0.1225$

Value 0.1225 for calculation of Bekasi City
 $V_6 = (0.25)(0.01) + (0.25)(0.04) + (0.50)(0.06)$
 $= 0.0025 + 0.01 + 0.03 = 0.0425$

$V_{11} = (0.25)(0.16) + (0.25)(0.06) + (0.50)(0.01) = 0.04 + 0.015 + 0.005 = 0.06$

Value 0.06 for the calculation of the City of Jambi

h. Best Alternative Value

No	City	Market Share	Number of Distribution	Percentage of Market Share	Final score
1	Kota Jakarta	1	0.30	0.16	0.7
2	Kota Surabaya	0.55	0.09	1	0.405
3	Kota Tangerang	18	0.04	0.04	0.315
4	Kota Lampung	0.45	0.24	0.20	0.2725
5	Kota Yogyakarta	0.20	0.63	0.007	0.211

i. Conclusion

No	City	Market Share	Number of Distribution	Percentage of Market Share	Final score	City
1	Kota Jakarta	1	0.30	0.16	0.7	I
2	Kota Surabaya	0.55	0.09	1	0.405	II
3	Kota Tangerang	18	0.04	0.04	0.315	III



3.2.1.2 Stage Retention

a. Company Information

This facility is a method used by companies to make it easier for customers and prospective customers to know information about the company. The company information includes the company's history, description of the company, address and contact of the company so that the company's value is good and can be trusted by customers

b. Company Product Information

This facility is information about products sold by the company. This facility can facilitate customers in knowing products

3.3 System Testing System

testing is the most important thing that aims to find errors or deficiencies in the information system being tested. Testing this system uses testing *black box*. testing *Black box* focuses on functional requirements of software, *User Acceptance Test (UAT)* and end-user acceptance.

3.3.1 Functional Testing Scenarios

Kasus dan Hasil Uji (Data Benar)			
Data Masukan	Harapan	Pengamatan	Kesimpulan
Contoh masukan Username : Owner Password : Owner	Jika Mengisikan data login yang sudah terdaftar, Akan masuk ke halaman utama sistem	Data login benar dan pengguna akan masuk ke halaman utama sistem	[X] diterima [] ditolak

3.3.2 UAT

No	Description Testing Testing	Procedure
1	Testing Adding Data Segmentation Category	1. Select Menu data category segmentation 2. Click menu add data 3. Enter Category Name, Description, Category Status 4. Press save button
2	Test Change Data Segmentation Category	1. Click edit menu data 2. Enter the name of the category, description, category status. 3. Press the save button.

4. CONCLUSION

4.1 Conclusions

After conducting analysis, design, and testing. Then conclusions can be obtained as follows:

This Customer Relationship Management Information System can help Marketing Managers at PT Mtoa Indonesia Digdaya in determining new marketing areas that have high potential market share to be able to attract new customers

4.2 Suggestions

For the system to be built to work better, some things should be added as hoping that there is

functionality to interact between customers and companies

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