DETERMINATION OF PRODUCT MARKETING AREAS USING MARKET ANALYSIS WITH APPROACH CUSTOMER RELATIONSHIP MANAGEMENT (CRM) ON TASYA PRODUCTION

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ABSTRAK

Tasya Production is a company engaged in the production of clothing, which focuses on making baby clothes, located in North Sekelimus road No. 25 Bandung West Java. Currently, Tasya Production not only sells its products in cities and regencies in west java, but also market it to various stores in big cities in indonesia.

Based on the results of interviews with Mr. Beni Wahyudi as marketing manager of Tasya Production at this time the company has increased sales. With the increase in sales, the company plans to open new marketing areas. However, Managers experience constraints in determining areas that have high potential for the opening of new marketing areas. If the selection of areas for the determination of new marketing areas is not appropriate, it will affect the company directly, especially in the success or failure in sales porduk. Based on the description of the problem described earlier, it is concluded that the marketing manager needs an information system that uses a customer relationship management approach that can help in the determination of new high-potential marketing areas.

Keywords : Customer relationship management, information system, marketing area.

1. INTRODUCTION

Tasya Production is a company engaged in the production of clothing, which focuses on making baby clothes, located in North Sekelimus road No. 25 Bandung West Java. Currently, Tasya Production not only sells its products in cities and regencies in west java, but also market it to various stores in big cities in indonesia.

Based on the results of interviews with Mr. Beni Wahyudi as marketing manager of Tasya Production, currently the company experienced an increase in sales in the company's marketing area, the increase can be seen in the sales recap data from January to March 2017. In addition, according to Mr. Beni Wahyudi turns the buyers Tasya Procution products sold by customers in several marketing areas include buyers from outside the marketing area. As an example of marketing area of depok city. Customers in the city of Depok turned out to have consumers from the city Bogor. So also the marketing area in tasikmalaya turned out to have consumers from the city banjar and ciamis. By looking at the recap sales data and the presence of consumers from outside the marketing area then the company plans to open new marketing areas.

Based on interviews with Mr. Beni Wahyudi, the company relies on links or acquaintances owned by the company to open new marketing areas. Usually the marketing section relies on information obtained from the company link which subsequently the marketing department sends sales to prospective marketing areas to find information of potential markets in the area. Usually the sales will go to the shops - shops in the area by offering products and dig information about marketing similar products in the area through shop owners. But it takes a lot of time and money. In addition, sometimes the information obtained is less clear. That's because the information obtained from the sources is sometimes not in accordance with the reality that exist in the field and eventually products marketed in the area is not sold. This has an impact on the marketed products that eventually have to be shifted to other areas to minimize losses. However, still to attract products that do not sell to other areas require additional operational costs. In addition, in determining the marketing area of the company less maximize the high market potential, such as in the province of west Java the company did not open marketing in Bogor district, whereas according to the annual health report of West Java province Bogor is the region with the highest infant birth rate in west java where the baby is the main user of Tasya Production product. Thus the marketing department has difficulties in knowing regional information that has a high market share to spread the product to a wider market. In addition, the marketing department experienced constraints in determining the distributor, it is because the criteria / requirements to become a distributor is still less effective, causing customers who become distributors are unable to meet the targets set by the

company in the long term. This inhibits the process of opening / developing distributors where the opening of this distributor is needed to facilitate the distribution of products to customers who usually in this distribution takes time and cost is not small, because the distance between the delivery and the location of the destination different and far. Thus the marketing department still has problems in determining the distributor in the marketing area.

In maintaining its position, the company must have a strategy in the determination of the market because the current market share is quite competitive. The Company will operate on one or more geographical areas considered potential and profitable..

2. RESEARCH CONTENTS

2.1 Theoretical Basis

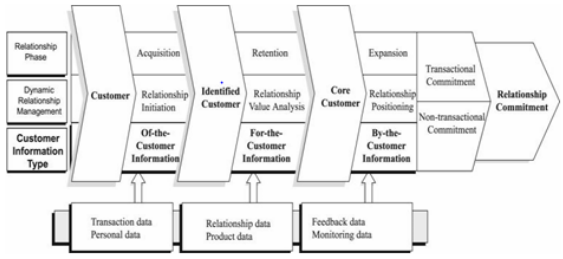
The foundation of theory is a collection of theories that become the basis of the development of Regional Information Determination Information System Using Market Share Analysis With Customer Relationship Management Approach.

2.1.1 Customer Relationship Management

Customer Relationship Management (CRM) is a strategy in a business that integrates the various processes and internal functions of the company with various external networks to create and realize value for consumers profitable [1].

2.1.2 Dynamic CRM

A study of the CRM framework conducted by Chung-Hoon Park and Young-Gul Kim [2], reviewed the linkage of information and marketing strategies, and created a model described in the "Framework of Dynamic CRM". It is illustrated that the CRM phase in a framework is a series of Acquisition-Retention-Expansion processes. As an integrated CRM framework based on customer information types arranged gradually in line with the development of customer relationships.



Picture 1 Dynamic-CRM Framework

The CRM cycle consists of the steps of acquistion, retention and expansion [3]. As for more details every stage - tahapa CRM cycle can be seen explanation as follows :

1. Acquisition Phase is a relationship stage used to attract potential customers to make transactions. It can be said that the acquisition stage is the stage to get more new customers.
2. Retention Stage is the stage used to improve customer relationship with. Retention phase on frameworck dynamic CRM has the purpose to provide information from the company to the customer in order to establish a good relationship with customers and can retain customers.
3. Expansion stage is the last phase phase in dynamic CRM, which is used to maintain customer loyalty.

2.1.3 Market Share

Market share is a market that is controlled by a company or is also a reflection of the ability of a company in selling its products to its competitors in a period and region [4].

There are four characteristics that affect consumers in their decision to make a purchase of a product, namely:

1. Cultural Factors
2. Economic Factors
3. Social Factors
4. Psychological Factors

In addition, a buyer passes several processes in making a decision to buy a product that is initiated by the introduction of needs followed by searching for product information needed. Furthermore, evaluate the various product information needed to finally take the decision of the product to be purchased and the last behavior after making a purchase [5].

2.1.4 Market Segmentation

Market segmentation can be interpreted as a grouping of the entire market that consists of various elements into groups or segments that have similarities in a way such as the needs, behaviors, desires and responses to marketing programs offered by the company [6].

There are 4 variables used in market segment according to Kotler, that is :

1. Geographical Segmentation

Geographical segmentation is a marketing activity that divides the territory of several geographical units such as regions and climates.

2. Demographic Segmentation

Demographic segmentation is a marketing activity that divides the market into groups with each base variables such as gender, age, occupation and income.

3. Psychographic Segmentation

Psychographic segmentation is the activity of dividing the consumer into groups - groups that are different from the basic lifestyle and personality variables.

4. Behavior

Behavior segmentation is the activity of dividing the consumer into groups - groups that are different

from the basic variables such as loyalty to product brands and benefits sought.

2.1.5 Determination of Market Position

Market positioning is any effort made to design a product or brand to look different from a competitor's product so that it gets an impression and occupies a place in the minds of consumers. Kotler views the position as a creative exercise for the product. Positioning starts with a product, an item, a service, an organization, an institution, or even a person.

The main purpose of market positioning is to differentiate consumer perceptions of products and services from competitors. In determining the market position can also be said to put more emphasis on communication because it is the determination of market position is a communication strategy.

2.1.6 *Simple Additive Weighting* (SAW)

Simple Additive Weighting (SAW) method is a frequent and widely used method of decision-making with many attributes. This method is a method that performs the weighted sum of the all criterion's alternative ratings.

SAW method has 2 attributes that are criteria for attribute of profit (benefit) and criteria for attribute cost (cost). The steps in the settlement can be seen as follows :

1. Determine the alternative value of Ai.
2. Determining criteria that will become the reference for decision making (Cj).
3. Enter value to each alternative of specified criterion.
4. Determine the weight of each - each criterion that has been determined (W).
5. Create a table of values of each criterion
6. Create an X decision matrix that has previously been matched against each criterion in the criteria value table.

$$X = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1j} \\ \vdots & & & \vdots \\ x_{i1} & x_{i2} & \cdots & x_{ij} \end{bmatrix}$$

7. Perform calculation process of normalization of decision X.

$$r_{ij} = \begin{cases} \dfrac{x_{ij}}{Max_i(x_{ij})} \\ \dfrac{Min_i(x_{ij})}{x_{ij}} \end{cases}$$

Keterangan :

a. x_{ij} can be called a benefit attribute (benefit) if the criteria give benefits to the company. Instead x_{ij} can be referred to the cost attribute (cost) if the criteria cause losses to the company.

b. If in the form of profit criteria then the value x_{ij} divided by value $Max_i(x_{ij})$ of each column, while for cost criteria, value $Min_i(x_{ij})$ of each column divided by value x_{ij} .

8. After doing the process of calculating the normalization of X matrix, it will get the result of the normalization, which will be the matrix R.

$$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1j} \\ \vdots & & & \vdots \\ r_{i1} & r_{i2} & \cdots & r_{ij} \end{bmatrix}$$

9. The last step to do is to multiply the value of the matrix R with each weight (W) that has been determined.

$$V_i = \sum_{j=1}^{n} w_j r_{ij}$$

The final calculation result is taken by the final value of the largest and it is the best alternative value.

2.1.7 *Weighted Product*

Weighted Product is a method of decision making. This method uses a multiplication method to connect between attribute rankings, where each attribute is raised first with the corresponding weight [3]. This process is actually the same as the normalization process.

The Weighted Product (WP) method is a frequently used method other than the SAW method. This method is simpler than SAW method. The difference of this method with the SAW method is that this method does not normalize the data in the calculation process. WP method is also referred to as dimensionless analysis because its mathematical structure eliminates the unit of measure of a data object.

$$\mathbf{S_i = \prod_{j=1}^{n} X_{ij}^{kW_j}, dengan \ \ i = 1,2,.., \ m}$$

Where :

S = alternative preference
X = criteria value
W = weighting criteria
i = alternative
j = kriteia
n = number of criteria

$$\sum_{j=1}^{n} \mathbf{W_j = 1}$$

Wj is the same as the SAW method. If the attribute is a profit then the rank is positive. Conversely, if the attribute is a cost then the rank is negative. The relative preferences of each alternative are given as follows:

$$V_i = \frac{\prod_{j=1}^{n} x_{ij}\ wj}{\prod_{j=1}^{n} (x_j*)wj}$$

Where :

V = alternative preference is analogous to vector V
X = criteria value
W= weighting criteria
j = criteria
n = number of criteria
* = number of criteria that have been assessed in vector S.

Here are the steps taken in the completion of the Weighted Product method:

1. Each attribute is multiplied by a boobot as a rank of poitif as a benefit attribute and a negative rank if attribute as cost.
2. The result of the multiplication of attributes with subsequent weights is added to the value of each alternative.
3. Finding an alternative value by performing the same step as step one, only using the highest value for each highest attribute for each attribute benefit and lowest for the cost attribute.
4. Divide the value of V for each alternative with a standard value (V (A *)) that produces R.
5. The greatest result of the previous step is the best alternative to be a decision.

2.2.1 Problem Analysis

Problem analysis is an assumption of the problem to be described in the procedure. From the results of research conducted got the problem as follows :

How to build a new market determination system using market share analysis with Customer Relationship Management approach at Tasya Production.

2.2.2 Analysis of Application of CRM Framework in Tasya Production

The CRM framework used in Customer Relationship Management Information System in Tasya Production is Dynamic CRM. Described that the CRM phase in a framework of the series process of Acquisition - Retention - Expansion.

2.2.2.1 Phase *Acquisition*

Phase Acquisition is a relationship stage used to attract potential Tasya Production customers to conduct transactions with Tasya Production. The essence of the acquisition stage is getting new customers. The steps taken by Tasya Productions attract new customers is by opening new marketing areas

1. Market Share Analysis for the opening of new marketing areas.

The purpose of market share analysis is to know the market potential / customers in each region of the products offered by Tasya Production. To know the market share, then done 3 stages of analysis of market segmentation, Targeting (Target Market Determination) and Positioning (Determination of Market Position) :

1. Market Segmentation

Market segmentation is the activity of dividing a market into different groups and in the segmentation will be divided into 3 segmentation that is geographical market segmentation, demographic market segmentation and behavioral market segmentation.

a. Demographic Segmentation

Demographic segmentation is dividing the market into groups based on variables. The demographic segmentation variables used as criteria are as follows:

1. Number of ages 0-12 months
2. Number of women aged 20-40 years
3. Average number of live births per woman.

b. Behavior Segmentation

Behavior market segmentation is dividing the market into several groups based on attitudes toward the product. So the criterion for this segmentation is the average expenditure per capita

c. Geographic Segmentation Analysis

Geographic market segmentation is an activity of dividing the market into different geographical units, such as country, province, district or surrounding environment.

2. *Targeting*

At this stage the determination of the target marketing area by calculating the criteria value. Age 0-12 months, women aged 20-40 years, average birthrate per woman which is the criterion of demographic segmentation and average expenditure per capita a month which is behavioral segmentation become target of opening of marketing area. Here are the criteria from each region obtained from the Indonesian Statistics Agency. Table 1 Criteria value data by BPS

Table 1 Criteria value data by BPS

No	Kota/ Kabupaten	Jumlah usia 0-12 bulan	Jumlah wanita usia 20-40 tahun	Rata – rata jumlah anak lahir hidup per wanita	Pengeluaran rata - rata per kapita sebulan
1	Kab. Bogor	124.780	840.391	3	205.839
2	Kab. Sukabumi	46.656	364.976	3	426.855
3	Kab. Cianjur	41.472	323.590	4	386.868
4	Kab. Bandung	62.766	543.671	3	504.069
5	Kab. Garut	56.177	361.989	4	353.831
6	Kab. Tasikmalaya	30.986	250.653	3	366.050
7	Kab. Ciamis	18.430	215.091	3	444.794
8	Kab. Kuningan	19.893	154.943	3	415.280
9	Kab. Cirebon	47.016	332.168	3	460.973
10	Kab. Majalengka	20.863	178.533	3	487.697
11	Kab. Sumedang	20.055	166.656	3	564.434
12	Kab. Indramayu	35.484	252.056	3	484.115
13	Kab. Subang	31.088	225.225	3	513.924
14	Kab. Purwakarta	19.755	140.087	4	534.965
15	Kab. Karawang	48.923	362.237	3	557.829
16	Kab. Bekasi	94.579	532.486	3	722.928
17	Kab. Bandung Barat	29.384	244.647	3	418.844
18	Kota Bogor	19.875	168.939	3	993.911
19	Kota Sukabumi	6.145	47.269	3	750.243
20	Kota Bekasi	44.298	439.307	3	821.633
21	Kota Cimahi	10.341	48.953	3	660.474
22	Kota Banjar	3.247	456.746	3	884.859
23	Kota Depok	41.817	332.941	3	911.819
24	Kota Tasikmalaya	11.813	101.378	3	814.659
25	Kota Bandung	42.389	102.854	3	572.612
26	Kota Cirebon	5.536	25.483	3	507.230

After entering the value of each criteria then performed calculation phase by using Simple Additive Weighting method. For the first stage in the SAW method is to convert the criteria value into the matrix form.

$$X = \begin{pmatrix} 124780 & 840391 & 3 & 532341 \\ 46656 & 364976 & 3 & 426855 \\ 41472 & 323590 & 4 & 386868 \\ 62766 & 543671 & 3 & 504069 \\ 56177 & 361989 & 4 & 353831 \\ 30986 & 250653 & 3 & 366050 \\ 18430 & 215091 & 3 & 444794 \\ 19893 & 154943 & 3 & 415280 \\ 47016 & 332168 & 3 & 460973 \\ 20863 & 178533 & 3 & 487697 \\ 20055 & 166656 & 3 & 564434 \\ 35484 & 252056 & 3 & 484115 \\ 31088 & 225225 & 3 & 513924 \\ 19755 & 140087 & 4 & 534965 \\ 48923 & 362237 & 3 & 557829 \\ 94579 & 532486 & 3 & 722928 \\ 29384 & 244647 & 3 & 418844 \\ 6044 & 168939 & 3 & 993911 \\ 19875 & 47269 & 3 & 750243 \\ 6145 & 439307 & 3 & 821633 \\ 44298 & 48953 & 3 & 660474 \\ 10341 & 456746 & 3 & 884859 \\ 3247 & 332941 & 3 & 911819 \\ 141817 & 101378 & 3 & 814659 \\ 11813 & 102854 & 3 & 572612 \\ 42389 & 82645 & 3 & 507230 \end{pmatrix}$$

After changing the nilia criteria into the matrix, then determine the weight of the krteria and also determine the cost and benefits seen in tables 2 and 3.

Table 1 weights and criteria

No	Kriteria	Bobot
1.	Jumlah usia 0-12 bulan	30%
2.	Jumlah wanita usia 20-40 tahun	25%
3.	Rata – rata anak yang dilahirkan per wanita	20%
4.	Pengeluaran rata – rata per kapita sebulan	25 %

Table 2 Cost and Benefit

No	Kriteria	*Cost*	*Benefit*
1.	Jumlah usia 0-12 bulan		√
2.	Jumlah wanita usia 20-40 tahun		√
3.	Rata – rata anak lahir per wanita		√
4.	Rata – rata pengeluaran per kapita		√

After determining the criteria weight and cost also benefit, then the next step is to normalize the value of decision X.

To sum the number of ages the number of ages 0-12 months entered in the attribute of profit (benefit), this is because if the greater the value then the better.

So :

$$R_{11} = \frac{124780}{Max\ (124780;46656;41472;62766;56177;30986;18430;19893;47016;20863;20055;35484;31088;19755;48923;94579;29384;6044;19875;6145;44298;10341;3247)}$$

$$= \frac{124780}{124780} = 1$$

Value 1 for the calculation of Bogor Regency.

$$R_{12} = \frac{46656}{Max\ (124780;46656;41472;62766;56177;30986;18430;19893;47016;20863;20055;35484;31088;19755;48923;94579;29384;6044;19875;6145;44298;10341;3247)}$$

$$= \frac{46656}{124780} = 0{,}374$$

Value 0.374 for the calculation of Kab.Sukabumi.

For the number of women aged 20-40 years, this criterion is included in the attribute of profit (benefit), this is because if the greater the value then the better.

So :

$$R_{21} = \frac{840391}{Max\ (840391;364976;323590;543671;361989;250653;215091;154943;332168;178533;166656;252056;225225;140087;362237;532486;244647;168939;47269;439307;48953;456746;332941;101378;102854;82645;25483)}$$

$$= \frac{840391}{840391} = 1$$

Value 1 for the calculation of Bogor Regency.

$$R_{22} = \frac{364976}{Max\ (840391;364976;323590;543671;361989;250653;215091;154943;332168;178533;166656;252056;225225;140087;362237;532486;244647;168939;47269;439307;48953;456746;332941;101378;102854;82645;25483)}$$

$$= \frac{364976}{840391} = 0{,}434$$

Value 0.434 for the calculation of Sukabumi Regency.

For the sum of the average number of children born per woman, this criterion is included in the attribute of benefit (benefit), this is because if the greater the value then the better.

So :

$$R_{31} = \frac{3}{Max\ (3;3;4;3;4;3;3;3;3;3;3;3;3;4;3;3;3;3;3;3;3;3;3)}$$

$$= \frac{3}{4} = 0{,}750$$

Value 0,750 for the calculation of Bogor Regency.

$$R_{32} = \frac{3}{Max\ (3;3;4;3;4;3;3;3;3;3;3;3;3;4;3;3;3;3;3;3;3;3;3))}$$

$$= \frac{3}{4} = 1$$

Value 1 for the calculation of Sukabumi Regency.

For the average monthly expenditure per capita, this criterion falls within the benefit attribute (benefit), as it becomes more profitable to the company.

So:

$$R_{41} = \frac{Min\,(205839;426855;386868;504069;353831;366050;444794;415280;460973;487697;564434;484115;513924;534965;557829;722928;418844;993911;750243;821633;660474;884859;911819;814659;572612;507230)}{993911}$$

$$= \frac{205839}{993911} = 0{,}207$$

Value 0,207 for calculation of Regency of Bogor.

$$R_{42} = \frac{Min\,(205839;426855;386868;504069;353831;366050;444794;415280;460973;487697;564434;484115;513924;534965;557829;722928;418844;993911;750243;821633;660474;884859;911819;814659;572612;507230)}{993911}$$

$$= \frac{426855}{993911} = 0{,}429$$

Value 0.429 for calculation of Sukabumi Regency.

After doing the normalization of the next stage it will get matrix R.

$$R = \begin{Bmatrix} 1 & 1 & 0{,}750 & 0{,}535 \\ 0{,}374 & 0{,}434 & 0{,}750 & 0{,}429 \\ 0{,}332 & 0{,}385 & 1 & 0{,}389 \\ 0{,}503 & 0{,}647 & 0{,}750 & 0{,}507 \\ 0{,}450 & 0{,}431 & 1 & 0{,}356 \\ 0{,}248 & 0{,}298 & 0{,}750 & 0{,}368 \\ 0{,}148 & 0{,}256 & 0{,}750 & 0{,}448 \\ 0{,}159 & 0{,}184 & 0{,}750 & 0{,}418 \\ 0{,}377 & 0{,}395 & 0{,}750 & 0{,}464 \\ 0{,}167 & 0{,}212 & 0{,}750 & 0{,}491 \\ 0{,}161 & 0{,}198 & 0{,}750 & 0{,}568 \\ 0{,}284 & 0{,}300 & 0{,}750 & 0{,}487 \\ 0{,}249 & 0{,}268 & 0{,}750 & 0{,}517 \\ 0{,}158 & 0{,}167 & 1 & 0{,}538 \\ 0{,}392 & 0{,}431 & 0{,}750 & 0{,}561 \\ 0.758 & 0{,}634 & 0{,}750 & 0{,}727 \\ 0{,}235 & 0{,}291 & 0{,}750 & 0{,}421 \\ 0{,}048 & 0{,}201 & 0{,}750 & 1 \\ 0{,}159 & 0{,}056 & 0{,}750 & 0{,}755 \\ 0{,}049 & 0{,}523 & 0{,}750 & 0{,}827 \\ 0{,}340 & 0{,}058 & 0{,}750 & 0{,}665 \\ 0{,}044 & 0{,}543 & 0{,}750 & 0{,}890 \\ 0{,}335 & 0{,}396 & 0{,}750 & 0{,}917 \\ 0{,}335 & 0{,}121 & 0{,}075 & 0{,}820 \\ 0{,}083 & 0{,}122 & 0{,}750 & 0{,}576 \\ 0{,}095 & 0{,}030 & 0{,}750 & 0{,}510 \end{Bmatrix}$$

At this stage after getting the matrix R then will be calculated ranking with equation formula below.

So :

V_1 =(0,30)(1)+(0,25)(1)+(0,20)(0,750)+(0,25)(0,207)
= 0,30+0,30+0,15+ 0,041
= 0,752

The result of 0.752 is the ranking for Bogor Regency.

V_2 = (0,30)(0,374)+(0,25)(0,434)+(0,20)(0,750)+(0,25)(0,429)
= 0,112 + 0,108 + 0,15 + 0,107
= 0,478

The result of 0.478 is rank for Bekasi Regency.

After the ranking, then got the overall results in table 4. It can be concluded that Bogor Regency is a potential area for the opening of new marketing areas.

Table 3 Results of SAW method calculation

No	Kota/Kabupaten	Usia 0-12 Bulan	Wanita Usia 20-40 tahun	Rata – rata anak lahir per wanita	Rata - rata pengeluaran /kapita	Hasil Akhir
1	Kab. Bogor	1,000	1,000	0,750	0,207	0,752
2	Kab. Bekasi	0,758	0,634	0,750	0,727	0,718
3	Kota Depok	0,335	0,543	0,750	0,890	0,609
4	Kab. Bandung	0,503	0,647	0,750	0,507	0,589
5	Kota Bandung	0,340	0,523	0,750	0,827	0,589
6	Kota Bekasi	0,355	0,396	0,750	0,917	0,585
7	Kab. Garut	0,450	0,431	1,000	0,356	0,532
8	Kab. Karawang	0,392	0,431	0,750	0,561	0,516
9	Kota Bogor	0,159	0,201	0,750	1,000	0,498
10	Kab. Cianjur	0,332	0,385	1,000	0,389	0,493
11	Kab. Sukabumi	0,374	0,434	0,750	0,429	0,478
12	Kab. Cirebon	0,377	0,395	0,750	0,464	0,478
13	Kab. Indramayu	0,284	0,300	0,750	0,487	0,432
14	Kab. Purwakarta	0,158	0,167	1,000	0,538	0,424
15	Kab. Subang	0,249	0,268	0,750	0,517	0,421
16	Kota Cimahi	0,083	0,121	0,750	0,820	0,410
17	Kab. Bandung Barat	0,235	0,291	0,750	0,421	0,399
18	Kab. Tasikmalaya	0,248	0,298	0,750	0,368	0,391
19	Kab. Sumedang	0,161	0,161	0,161	0,161	0,161
20	Kab. Majalengka	0,167	0,212	0,750	0,491	0,376
21	Kab. Ciamis	0,148	0,256	0,750	0,448	0,370
22	Kota Sukabumi	0,049	0,056	0,750	0,755	0,368
23	Kota Tasikmalaya	0,095	0,122	0,750	0,576	0,353
24	Kab. Kuningan	0,159	0,184	0,750	0,418	0,348
25	Kota Cirebon	0,044	0,058	0,750	0,665	0,344
26	Kota Banjar	0,026	0,030	0,750	0,510	0,293

3. *Positioning*

After doing the geographical segmentation phase, the targeting of the market then obtained data from BPS 26 cities / regencies in the province of west java until the calculation analysis of Simple Additive Weighting obtained the conclusion that Bogor district is a new potential marketing area for marketing Tasya Production products. So the strategy undertaken in the positioning stage that will be done by Tasya Porduction is to market the product in Bogor district.

2.2.2.2 Phase *Retention*

Retention stage is the stage used to improve customer relationship with Tasya Production. Retention phase on frameworck dynamic CRM has the purpose to provide information from the company to the customer in order to establish a good relationship with customers and can retain customers. Steps that have been done by Tasya Production in the retention stage is by creating a website that displays company information. At this stage there is a Relationship Value Analysis, which is the second stage for Dynamic CRM Framework analysis, in this phase with the company information and product information, customer Tasya Production can establish a good relationship.

2.2.2.3 Phase *Expansion*

Expansion phase is the last phase phase of dynamic CRM, which is used to maintain customer loyalty to Tasya Production. The facilities that will be used in the expansion stage will open the distributor in the marketing area.

At this stage the company will open distributors in the marketing area to give the impression of the company's products getting closer to the customer. Distributors will make the company task more lightweight because of the flexibility as well as the efficiency of time and shipping cost will be more effective.

1. Criteria for Determining Distributors

In the opening of the determination of distributors certainly not arbitrary, there are criteria that must be owned by a store to become a distributor. In general to be a distributor there is a criteria of the number of transactions that must be met, such as in Tasya Production which sets the number of transactions to become a distributor. Each distributor must have an insfratucture and meet aspects that do not threaten the smoothness of marketing. For the case in Tasya Production there are several criteria used for the determination of distributors are as follows:

1. Average total monthly purchases
2. Has an adequate storage warehouse
3. Number of transportation fleet

Here is a case study for the determination of distributors to be calculated using the Weighted Product method.

Table 4 Store Data

No	Pelanggan (Toko)	Kriteria			Simbol
		Jumlah rata-rata transaksi	Mempunyai gudang penyimpanan	Jumlah armada transportasi	
1	Prima Utama	100jt	Ya	0	A
2	Mujur Giri Jaya	120jt	Ya	1	B
3	Zahra	320jt	Ya	1	C
4	Yahya Baby Shop	90jt	Ya	0	D

After knowing the example case, then the next step is to weighting the criteria that have been determined, can be seen in tables 5.6 and 7.

Table 5 Average weight of total purchases per month.

Rata – rata total pembelian per bulan	Bobot
<200jt	1
>= 200 jt dan <300 jt	2
>=300 jt dan <= 400 jt	3
>400 jt	4

Table 6 The average weights have storage warehouses

Mempunyai gudang penyimpanan	Bobot
Tidak	1
Iya	2

Table 7 Average number of transport fleets

Jumlah armada transportasi	Bobot
0	1
1	2
2	3
>=3	4

After weighing the criteria, we should match the criteria with each case.

Table 8 Weigh the criteria of each store

Kriteria	Alternatif			
	A	B	C	D
Rata – rata total pembelian perbulan	1	1	2	1
Mempunyai gudang penyimpanan	2	2	2	2
Jumlah armada transportasi	1	2	2	1

For the next stage determination of the minimum weight that has been determined by the company.

Table 9 Minimum weight criteria

Kriteria	Bobot Nilai
Rata – rata total pembelian perbulan	3
Mempunyai gudang penyimpanan	2
Jumlah armada transportasi	2

Next will be done weighting first. The initial weight W = (2,1,2) will be fixed so that the total weight ΣWj = 1, with W is the weight of each criterion the user enters. The calculation of improvement criteria by using the equation.

$$W_1 = \frac{3}{3+2+2} = 0,4$$

$$W_2 = \frac{2}{3+2+2} = 0,3$$

$$W_3 = \frac{2}{3+2+2} = 0,3$$

Table 10 Improved weighting criteria

Kriteria	Skala	Perbaikan Bobot
Rata – rata total pembelian perbulan	2	0,4
Mempunyai gudang penyimpanan	2	0,3
Jumlah armada transportasi	2	0,3

Then the next step after performing the weight fix is to calculate the vector S. S represents the value of each alternative. In this calculation step is multiplied all attributes (criteria) to an alternative W (weight) as a positive rank for attribute profits. Here is how to calculate vector S by using equation.

S1 (alternative A)
$= (1^{0,4}) (2^{0,3}) (1^{0,3})$
= 1 x 1,231 x 1

= 1,231

S2 (alternative B)
= $(1^{0,4})$ $(2^{0,3})$ $(2^{0,3})$
= 1 x 1,231 x 1,231
= 1,515

S3 (alternative C)
= $(2^{0,4})$ $(2^{0,3})$ $(2^{0,3})$
= 1,319 x 1,231 x 1,231
= 1,998

S4 (alternative D)
= $(1^{0,4})$ $(2^{0,3})$ $(1^{0,3})$
= 1 x 1,231 x 1
= 1,231

After the value of vector S obtained, then perform alternative ranking steps distributor. The trick is to divide the alternative V value by the total value of the total alternative value (vector S). Here are the ranking calculations :

$$V1 \text{ (Store A)} = \frac{1,231}{1,231+1,551+1,998+1,231} = \frac{1,231}{6,011} = 0,204$$

$$V2 \text{ (Store B)} = \frac{1,551}{1,231+1,551+1,998+1,231} = \frac{1,551}{6,011} = 0,258$$

$$V3 \text{ (Store C)} = \frac{1,998}{1,231+1,551+1,998+1,231} = \frac{1,998}{6,011} = 0,332$$

$$V4 \text{ (Store D)} = \frac{1,231}{1,231+1,551+1,998+1,231} = \frac{1,231}{6,011} = 0,204$$

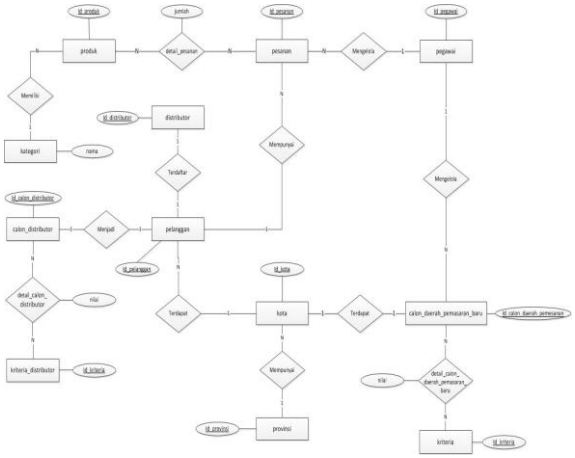
After calculating the value of vector V, then the result of the greatest value becomes the best alternative.

Table 11 The result of Weighted Product method calculation

Peringkat	Alternatif	Hasil
1	A (Prima Utama)	0,204
2	B (Mujur Giri Jaya)	0,258
3	C (Zahra)	0,332
4	D (Yahya Baby Shop)	0,204

2.2.3 Database Analysis

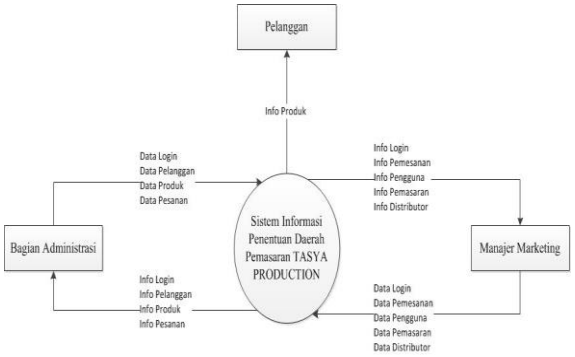
In the construction of a CRM system required a database design. The modeling that will be used in database design is using Entity Relational Diagram (ERD).



Picture 1 ERD

2.2.4 Diagram Context

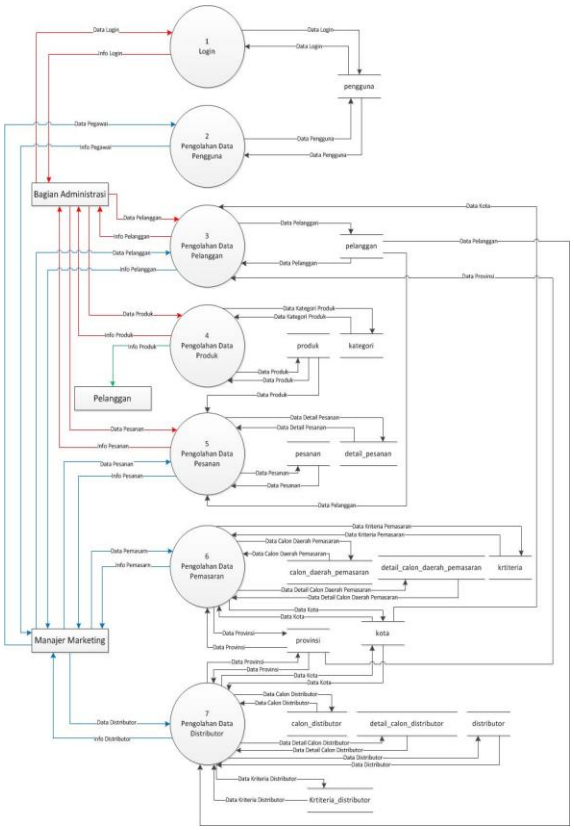
Context Diagram is a sautu diagram that describes the relationship between the outer enity and the in and out flow of the built system. The context diagram is depicted in a single circle. The single circle represents the whole of the system. There are 3 users who play a role in this system namely the owner, marketing and customer sections where each actor has different info and data rights. Here is a picture of the context diagram can be seen in Figure 3.



Picture 2 Diagram Context

2.2.5 *Data Flow Diagram*

Data Flow Diagram (DFD) is a diagram usually used in illustrating / describing an existing system or system will be built. Here is a picture of data flow diagram for Customer Relationship Management Information System at Tasya Production.



Gambar 3 Data Flow Diagram

2.2.6 System Testing

System testing is an important step that is done to determine whether the system built is appropriate. In addition, system testing also aims whether there are errors and shortcomings in the information system being tested. Testing the system intended to determine the performance of information systems that have been made in accordance with the purpose of designing information systems. In testing the system this time using black box testing. Testing using black box testing is more focused on functional requirements on the system.

In this test, in addition to using black box testing also uses beta testing.

2.2.6.1 Blackbox Testing

Based on the results of tests that have been done on the CRM information system, it can be concluded that the functional system has been able to generate system requirements as expected.

2.2.6.2 Beta Testing

Based on the following interviews are answers from interviews with users Tasya Production Marketing Manager who poured in the form of tables.

Tabel 12 Wawancara

Pertanyaan	Jawaban
Bagaimana pendapat anda tentang tampilan antarmuka pada sistem informasi penentuan daerah pemasaran ini?	Untuk tampilan antarmuka, sistem ini terlihat simple sehingga nyaman untuk digunakan, dari segi penempatan menu sampai warna sudah sesuai.
Bagaimana pendapat anda tentang bahasa yang digunakan pada sistem informasi penentuan daerah pemasaran ini?	Menurut saya bahasa yang digunakan pada sistem informasi ini mudah dimengerti.
Apakah dengan adanya sistem informasi penentuan daerah pemasaran ini dapat membantu anda dalam menentukan daerah pangsa pasar untuk pembukaan daerah pemasaran baru ?	Cukup membantu, karena dapat memberikan rekomendasi dalam penentuan daerah untuk pembukaan daerah pemasaran baru dan sudah sesuai kebutuhan.
Apakah dengan adanya sistem informasi penentuan daerah pemasaran ini dapat membantu anda dalam penentuan distributor?	Cukup membantu, karena memang untuk penentuan distributor ini tidak hanya terpaku pada banyaknya transaksi pembelian, tapi memang ada hal lain yang harus diperhatikan.
Bagaimana pendapat anda tentang kemudahan proses pengolahan data pada sistem informasi penentuan daerah pemasaran ini?	Untuk pengolahan data mudah dipahami dan dioperasikan.
Bagaimana pendapat anda tentang kemudahan penggunaan sistem informasi penentuan daerah pemasaran ini secara keseluruhan?	Menurut saya kemudahan penggunaan sistem informasi ini sebagian besar sudah baik dan mudah dimengerti.

3. INVOLUCRE

In this chapter contains the overall conclusions of the discussion of several chapters that have been described before, as well as suggestions on systems that have been built for further system development in the future.

3.1 Conclusion

After performing the analysis, design, and testing, it can be concluded as follows:

Information Determination System Marketing Area uses Market Share Analysis with this Customer Relationship Management Approach can help Marketing Manager Tasya Production in determining the new marketing area and determination of distributors.

3.2 Suggestion

Agar sistem yang dibangun dapat bekerja dengan lebih baik, hendaknya dilakukan penambahan beberapa hal sebagai berikut :

1. Adanya penambahan fasilitas menu penjualan online pada Sistem Informasi *Customer Relationship Management* di Tasya Production.
2. Adanya penambahan fasilitas keluhan pelanggan online pada Sistem Informasi *Customer Relationship Management* di Tasya Production.
3. Adanya fasilitas analisis pangsa pasar terhadap pesaing pada Sistem Informasi *Customer Relationship Management* di Tasya Production.

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