

CRM DIMENSIONAL ANALYSIS AND ANP METHOD FOR SUB-CONTRACTOR COMPANY OF OIL AND GAS INDUSTRY IN ORDER TO REDUCE CUSTOMER COMPLAINTS

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ABSTRACT

To enhance competitive advantage in oil and gas industry sub-contractor in Indonesia, the attention to customer satisfaction and make customers loyalty should be a priority. This study uses the Analytic Network Process (ANP) to get the dimensions and criteria strategic of Customer Relationship Management (CRM) through interviews and questionnaires to five experts in the field of CRM oil and gas industry sub-contractor. The resulted of this research are six main dimensions and twenty-seven criteria for the design of a CRM strategy. It was found that the most important dimension is Customer, Output CRM, CRM Strategy, CRM Process, Company Workcode Analysis and Organizational Alignment. The priority of CRM criteria to effective CRM strategy is Customer Retention.

Keywords: customer satisfaction, customer loyalty, analytic network process (ANP) method, customer relationship management (CRM).

1. INTRODUCTION

Oil and gas is a natural resource that is very strategic for Indonesia, not only as a supplier fuel needs and industrial raw materials in the country, but also a main source revenue and foreign exchange. Based on Presidential Regulation No. 05 Year 2006 on National Energy Policy, the target of energy mix in 2006 for oil 51.66% and natural gas 28.57% from the total of national energy mix. Related to the above conditions, the development of investment opportunities in Indonesian oil and gas industry, both upstream and downstream in the field is still very promising.

With the paradigm shift on previous business to product oriented then move on to customer who requires company to obtain more information about the market, especially customers (Nguyen, Sherif and Newby, 2007; Chang, 2007). Customer satisfaction is the key for creating customer loyalty. A company that responded to customer complaints well actually extends a second chance to satisfy its customers. Complaints impact to strategic on company and an opportunity to strengthen

relationships and create loyalty (Timm, 2005).

To achieve a competitive advantage with customer focus, companies need information about who their customers are, what customers want, how they satisfied the needs of customers and other factors related. Here the company needs to implement a strategy that deals with the creation of customer satisfaction that is Customer Relationship Management (CRM) (Chadiq, 2007). Customer Relationship Management (CRM) is a multi-perspective business paradigm which is composed of people, processes and technology (Chen & Popovich, 2003). In keeping with the roots of relationship marketing and information technology, Customer Relationship Management (CRM) aims at maximizing the benefits gained from relationships with customers. Actually the fundamental reason that prompted the company to build relationships with customers is a real economic motive. Greatest asset of the company's business comes from customers, either directly or indirectly, and then the company needs to identify, satisfy and retain the most profitable customers (Buttle, 2004).

One of the problems that arise in one of the sub-contractor companies of oil and gas industry business is the low level of customer satisfaction based on data from a high level of customer complaints over products and services used by the customer. Figure 1 shows the level of customer complaints from one of sub-contractor company of oil and gas industry.

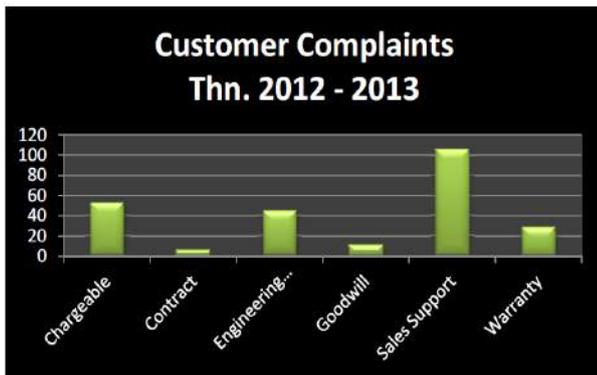


Figure 1. Customer Complaint Level

Companies must create relationships with customers, cultivate and maintain long term relationships with customers, create and increase customer loyalty. One strategy that is associated with creation of customer satisfaction in order to achieve competitive advantage that can be done by the company is implementation of Customer Relationship Management (CRM) strategy. So the purpose on this study is to find the strategic dimensions and criteria that influence the effectiveness of strategy formulation on Customer Relationship Management (CRM).

2. THEORETICAL BACKGROUND

2.1. Customer Relationship Management (CRM)

Customer Relationship Management (CRM) is a multi-perspective business paradigm which is composed of people, processes and technology (Chen & Popovich, 2003). CRM aims to maximize the benefits gained from relationships with customers. In 1985, the definition of CRM begins to form when the activity began aggressively marketing to the internal database of customer, at the time of Customer Relationship Management (CRM) is defined as marketing activities. Here are some definitions of Customer Relationship

Management (CRM) in the opinion of the experts listed in Table 1 below:

Table 1. Definition of Customer Relationship Management (CRM)

Researcher	Research Journal	Definition of CRM
Parvatiyar & Sheth (2001)	Customer Relationship Management (CRM): Emerging Practice, Process and Discipline. <i>Journal of Economic and Social Research</i> , 3(2), 1-34.	Customer Relationship Management (CRM) involves the integration of marketing, sales, customer service and supply chain functions of organization to achieve efficiency and effectiveness in delivering more value.
Chen & Popovich (2003)	Understanding Customer Relationship Management (CRM): People, Process and Technology. <i>Business Process Management Journal</i> , 9, 672-688.	Customer Relationship Management (CRM) as a multi-perspective business paradigm which consists of people, process and technology.
Kim, Suh & Hwang (2003)	A Model for Evaluating the Effectiveness of CRM using the Balanced Scorecard. <i>Journal of Interactive Marketing</i> , (17), 5-19.	Customer Relationship Management (CRM) is a managerial effort to manage business interactions with customers, by combining business process and technology that attempts to understand the company's customer.
Kincaid (2003)	<i>Customer Relationship Management (CRM): Getting it Right</i> . Prentice Hall PTR, Upper Saddle River, NJ.	Customer Relationship Management (CRM) as the strategic use of information, processes, technology and people to manage customer relationships with companies in customer life cycle.
Zablah, Bellenger & Johnston (2003)	An Evaluation of Divergent Perspective on Customer Relationship Management: Towards a Common Understanding of an Emerging Phenomenon. <i>Industrial Marketing Management</i> , 33(6), 475-489.	Customer Relationship Management (CRM) as a philosophy of related derivatives relationship marketing is largely ignored in the literature. There are 5 categories: strategy, process, philosophy, organizational and technological capabilities.

According to Mastouri and Boumaiza (2011), following the identification of main features of the definition found and to characterize most of definitions of Customer Relationship Management (CRM) in the literature:

Process: Features of this definition determine that the Customer Relationship Management (CRM) is a process, i.e. the transformation mechanism which has a clear purpose, input and output; Technology: Features of this definition requires that the Customer Relationship Management (CRM) technology to achieve specified goals; Strategy: Features of this definition define Customer Relationship Management (CRM) as a strategy and not a computer program; People: Features of this definition indicate that the concept of work Customer Relationship Management (CRM) lies in people; Information: Features of this definition indicate that the concept of work Customer Relationship Management (CRM) lies in the information; Matching Product /Company and Customer: Features of this definition indicates that the concept of work Customer Relationship Management (CRM) lies in matching the company and its

products to customers; Know Your Customer: Features of this definition indicates that the concept of work Customer Relationship Management (CRM) lies in understanding (wants and needs) customers; Business Value: Features of this definition indicates that the concept of work Customer Relationship Management (CRM) in the direction of increasing the value of the company's business; Partnership: Features of this definition indicate that the concept of work Customer Relationship Management (CRM) refers to a kind of partnership between the customer and the company; Relationship: Features of this definition indicate that the concept of work Customer Relationship Management (CRM) refers to the definition of relationship between companies and customers.

According to Kalakota and Robinson (2001) there are three stages of Customer Relationship Management (CRM), namely: Getting new customers (acquire), acquired new customers by providing ease of access to information, new innovations and exciting services; Enhance relationships with existing customers (Enhance), the company seeks to establish relationships with customers by providing good service to their customers (customer service). The application of cross-selling or up-selling in the second stage can increase the company's revenue and reduce costs to acquire customers (reduce cost); Retaining customers (retain), is an attempt to get customer loyalty by listening to our customers and strive to meet the customer's wishes.

2.2. Customer Satisfaction, Customer Loyalty and Business Performance

Customer Relationship Management (CRM) system is running as a business enterprise can improve performance by increasing the customer satisfaction and in turn foster their loyalty, as shown in Figure 2. The model shows a very convincing logic and dubbed the satisfaction-profit chain. Satisfaction will increase because of in-depth information about consumers making better understand their company which also increases the company's value in the eyes of consumers. With higher levels of customer satisfaction, will increase the tendency of consumers to re-purchase the products offered by the company. In turn, this condition will affect

consumer purchasing behavior and very significant impact on the business performance of the company.

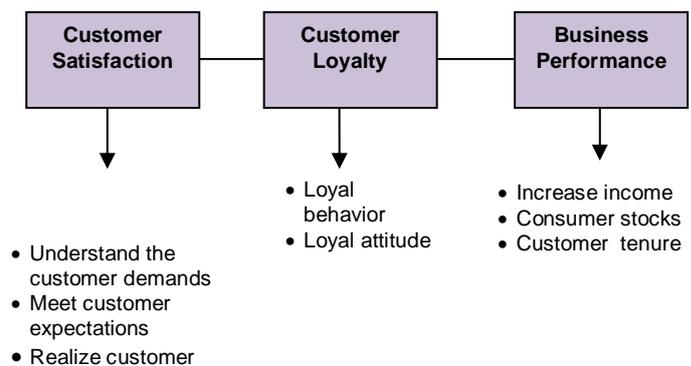


Figure 2. Customer Satisfaction, Customer Loyalty and Business Performance

Source: Buttle (2004)

Various researches on customer satisfaction have resulted in varied definitions and benchmarks regarding the satisfaction. One definition is as follows. Customer satisfaction is a response to a feeling of satisfaction arising from experience of consuming a product or service or a fraction of that experience. Consumer satisfaction is a favourable response while the dissatisfaction of customers is an unpleasant response. Component of the consumer experience or a fraction of the experience of these definitions allows us to evaluate customer satisfaction of some or all elements of the consumer experience. The parts in question can be a product, service or process or service and various other components of the consumer experience. The most common way to operational satisfaction is taken to compare consumer perceptions about an experience (or a small part of the experience) with their expectations. The method of measurement is called a model of consumer satisfaction expectancy disconfirmation (Buttle, 2004).

2.3. Analytical Network Process (ANP)

Analytical Network Process (ANP) is a theory of measurement generally applied to the dominance of an influence on some alternatives through a stakeholder or attributes or criteria (Saaty, 2001). According to Professor Thomas L. Saaty, the research experts from Pittsburgh University, Analytical Network Process (ANP) is a generalization of the Analytical Hierarchy Process (AHP)

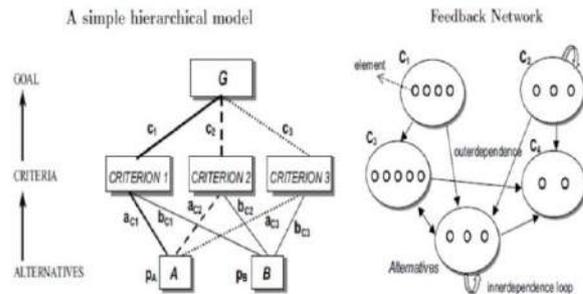
and a new approach to qualitative methods, taking into account the dependencies between the elements of the hierarchy. Many decision problems cannot be structured hierarchically because they involve interaction and dependence of elements higher in the hierarchy on lower level elements. According to Saaty (1988), the network of connections between components can be identified through the thinking person's relative is not bound by the rules. Analytical Network Process (ANP) particularly well suited for modelling the relationship of interdependence. Approach of Analytical Network Process (ANP) is defined as a network of nonlinear relationships between various factors. Through Analytical Network Process (ANP), will be predictable and presented competitors or clusters accompanied by allegations of an interaction between competitors and elements of its members, including the relative strength of these interactions in an attempt to influence each other in making decisions (Saaty, 2001).

In ANP levels in the system is no longer higher or lower, as a level to dominate or be dominated, directly or indirectly by other levels so that a model of Analytical Network Process (ANP) are not represented in the form of a hierarchy, but a form of network.

In making decisions, a distinction between hierarchical structures and networks are used to reflect its parts. Level in the hierarchy is arranged in descending order according to their influence. In a network, components (network-level designation) are not arranged in a particular order, but are connected in pairs with straight lines. Direction of the arrow reflects the influence of a component to another component. Pairwise comparisons within component that created by the dominance effect of each pairs of elements in the system. In the network component system can be considered as elements that interact and affect one another with reference to a criterion.

Hierarchy just described a functional dependency relationship in one direction, namely functional dependency (level) on the bottom to top component (level). Network is able to accommodate two-way functional dependency, namely the components of the lower and upper parts are functionally

interdependent. However, both in the hierarchy or network elements within each component allowed interdependent (inner dependent).



3. RESEARCH METHOD

In this study, Analytic Network Process (ANP) is used to obtain benefit of the dimensions and weight criteria of Customer Relationship Management (CRM) which will be used as attributes in the design of Customer Relationship Management (CRM) strategy on oil and gas industry sub-contractor.

First step is to identify the dimensions and criteria for Customer Relationship Management (CRM) based on literature review and confirmation by experts in sub-contractor of Oil and Gas industry. The second step is to determine dimensions and criteria Customer Relationship Management (CRM). Preparation and dissemination of first questionnaire to eliminate dimensions and criteria of Customer Relationship Management (CRM) based on expert opinion (management level in the sub-contractor of oil and gas industry). The respondents were chosen as follows: one person Business Development Manager with 7 years of working experience, two Senior Sales Manager with working experience for 8 years and 10 years and two Country Manager with working experience for 7 years and 14 years.

The third step is to determine existing relationships between all dimensions and criteria to describe the model structure. Based on second questionnaires to experts, then can be described the network

relationship of Analytic Network Process (ANP).

Fourth step, performed pairwise comparisons by experts for weight calculation in Analytic Network Process (ANP). All dimensions and criteria that have been known to have a relationship based on the results of second questionnaire will be compared with each other to determine level of importance of each measurement using a 9 point scale Saaty

Results of pairwise comparisons will be processed using "Super Decision Software". These results will be taken into consideration in preparation of Customer Relationship Management (CRM) strategy.

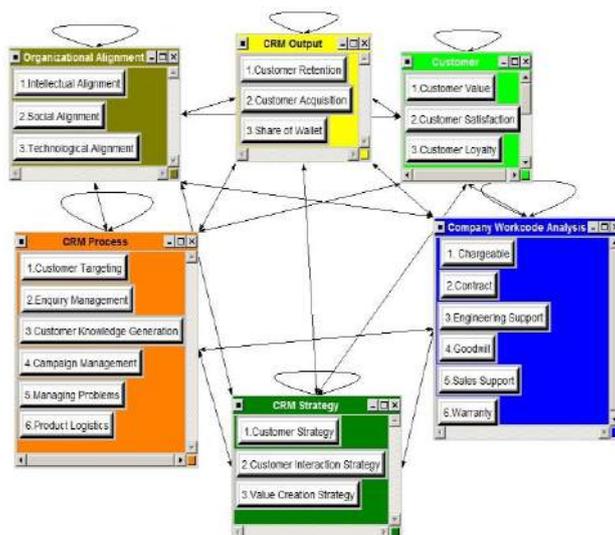


Figure 4. Analytic Network Process (ANP) Model for Dimension and Criteria of CRM

4. RESULT AND DISCUSSION

Based on literature review and discussions with experts, and then compiled for next steps to identify the dimensions and criteria of Customer Relationship Management (CRM). Initial dimensions and criteria of Customer Relationship Management (CRM) used evaluation criteria of Customer Relationship Management (CRM) (Oztaysi, Kaya & Kahraman, 2011), a major factor in Customer Relationship Management (CRM) performance (Soeini, Jafari & Abdollahzadeh, 2012), customers perspective of CRM scorecard (Weber & Hainz, 2006) and company Workcode Analysis of CRM used by company. It observed six dimensions and twenty-seven criterias of CRM.

Final priority values obtained from limit supermatrix and normalization based group, bringing the total value of the priority of each group totaled one. Final priority values can be seen in Table 1.

Table 1. Final Priority Value for Dimension and Criteria of CRM

Cluster	Name	Normalized by Cluster	Limiting
CRM Output (0.092768)	1.Customer Retention	0.81080	0.065433
	2.Customer Acquisition	0.08458	0.006826
	3.Share of Wallet	0.10462	0.008443
Customer (0.537085)	1.Customer Value	0.02512	0.014385
	2.Customer Satisfaction	0.39925	0.228601
	3.Customer Loyalty	0.09762	0.055895
	4.Customer Response	0.03659	0.020951
	5.Customer Trust	0.30984	0.177410
	6.Customer Complaint	0.13157	0.075336
CRM Process (0.116094)	1.Customer Targeting	0.02113	0.002709
	2.Enquiry Management	0.21691	0.027806
	3.Customer Knowledge Generation	0.12031	0.015423
	4.Campaign Management	0.02312	0.002964
	5.Managing Problems	0.55192	0.070751
	6.Product Logistics	0.06660	0.008537
Organizational Alignment (0.048750)	1.Intellectual Alignment	0.61606	0.026761
	2.Social Alignment	0.30979	0.013457
	3.Technological Alignment	0.07415	0.003221
Company Workcode Analysis (0.035667)	1.Chargeable	0.00776	0.000271
	2.Contract	0.10202	0.003564
	3.Engineering Support	0.15391	0.005377
	4.Goodwill	0.02153	0.000752
	5.Sales Support	0.57508	0.020091
	6.Warranty	0.13971	0.004881
CRM Strategy (0.169636)	1.Customer Strategy	0.07587	0.010634
	2.Customer Interaction Strategy	0.40674	0.057007
	3.Value Creation Strategy	0.51738	0.072514

From the results of pairwise comparisons between dimensions and criteria of Customer Relationship Management (CRM) has found that the highest weight is

customer dimension with a weight of 0.53709, while the lowest weight is company workcode analysis dimension with a weight of 0.03567. The results of comparisons sequence between dimensions and criteria of Customer Relationship Management (CRM) from highest to lowest weights are as follows: Customer - CRM Strategy - CRM Process – CRM Output - Organizational Alignment - Company Workcode Analysis.

Table 2. Ranking of CRM Dimension

Dimension	Weight	Rank
Customer	0.53709	1
CRM Strategy	0.16964	2
CRM Process	0.11609	3
CRM Output	0.09277	4
Organizational Alignment	0.04875	5
Company Workcode Analysis	0.03567	6

The design of Customer Relationship Management (CRM) strategy needs to pay attention to constituent dimensions and criteria. From the results of this study, we get 6 (six) dimensions and 27 (twenty seven) criteria of CRM. Based on the ranking dimension results generated from data processing using a super decision software is known that the customer dimension obtain the highest weight, ie 0.53709 and the lowest weight is company workcode analysis dimension, ie 0.03567. This weighting results indicate that to effective CRM strategy then customer dimension should be increased with supported in increasing performance criteria inside customer dimension.

The first priority criteria is customer satisfaction with importance weight of 40%. In creating customer satisfaction, company must provide the best service and creating a system to gain more customers and to have ability to retain loyal customers. With an increasing customer satisfaction level, will also increase the customer tendency to re-purchase products offered by company. This condition will affect to customer behavior and significant impact on company business performance.

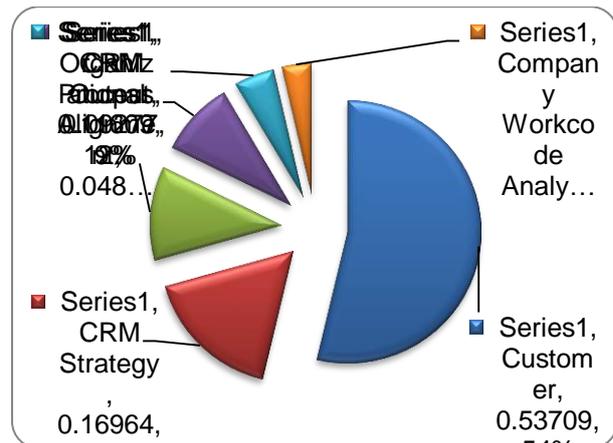


Figure 5. Weight of Criteria on Customer Dimension

Then the second priority is customer trust criteria of 31%. Aspects of customer trust is very important because it will increase company's revenue, customers will tend to buy products offered by company rather than switch to a competitor. The third priority is customer complaint, the importance weight of 13%. Companies can improve services based on these complaints and customers were quite concerned with service level provided by company. The first objective of handling complaints is not only addressing the root causes, but also to retain customers. So, the steps taken in response to the customer to be something crucial.

Fourth priority criteria is customer loyalty with importance weight of 10%. Customer loyalty arises from customer satisfaction to the ministry. When customers are satisfied, then they will be back next time, but when they are not satisfied, then they will never come back again. Then fifth priority criteria is customer response with importance weight of 4% and last priority criteria is customer value with importance weight of 2%. With the creation of customer satisfaction first then to be expected to lead to customer value by itself.

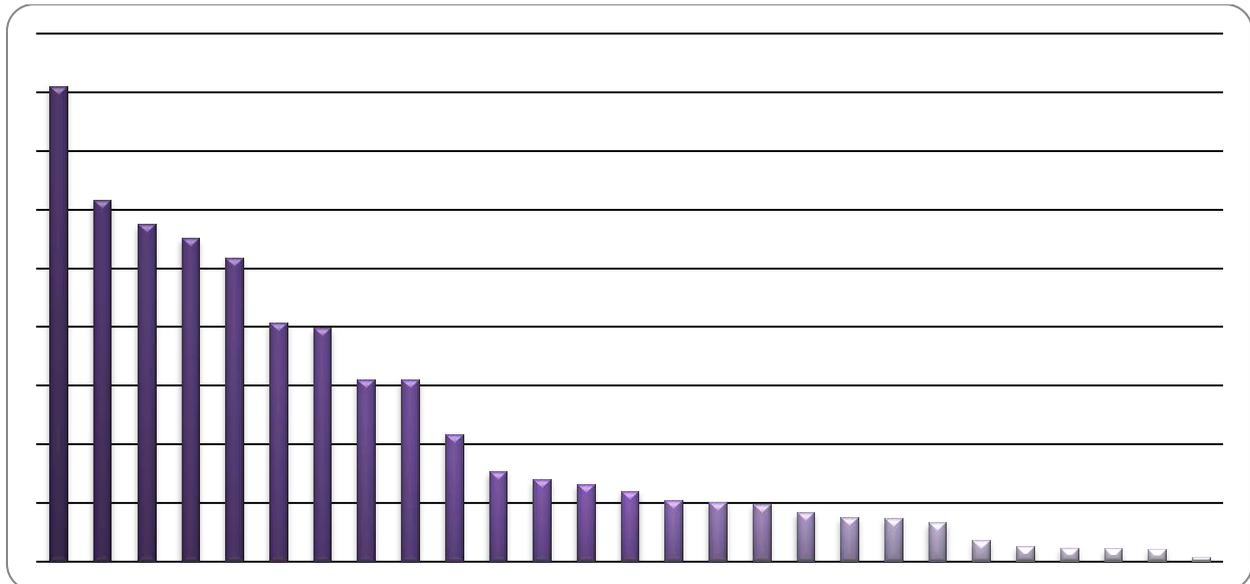


Figure 6. Importance of CRM Criteria

Furthermore, we can see the influence of each criteria to the design of Customer Relationship Management (CRM) strategy. The most influential criteria can be identified from the value of highest priority. From Figure 6 it can be seen that the highest priority criteria is customer retention (0.81080), intellectual alignment (0.61606), sales support (0.57508), managing problems (0.55192), value creation strategy (0.51738), and so on. The top five ranking criteria occupied by criteria derived from different dimensions. This suggests that criteria from other dimensions have dependency relationship with other dimensions and influence each other.

Based on the results obtained from third questionnaire inter-relationship between dimensions and criteria of CRM, each dimension and criteria of CRM influence each other. CRM Output dimension interplay with the customer dimension but the criteria for customer satisfaction affects customer acquisition criteria. Customer dimension interact with CRM Process dimension, so when customers are satisfied but its CRM Process bad it will affect the overall customer dimension. Organizational Alignment dimension interplay with CRM Strategy dimension, because CRM Strategy would be effective if there is support from top management level and in line with company's mission and vision.

Customer Relationship Management (CRM) is a business strategy to proactively develop preferences of an organization, so that employees, customers and distribution channels in improved performance result. The results of this study compared with reference journal (Oztaysi, Kaya & Kahraman, 2011) with an additional confirmation from the experts appearing dimensions and criteria for the design of a CRM strategy.

Based on Oztaysi, Kaya & Kahraman (2011), there are four (4) dimensions and 15 (fifteen) criteria of CRM. The results of this research is getting 6 (six) dimensions and 27 (twenty seven) criteria of CRM, with additional of 2 (two) dimensions and 12 (twelve) criteria.

5. CONCLUSION

This research generated a priority dimensions and criteria of CRM in order to design Customer Relationship Management (CRM) strategy for sub-contractor of oil and gas industry. Company should follow and implement these dimensions and criteria of CRM during preparation on CRM strategy in order to make CRM strategy more effectively. The achievement of successful CRM implementation will be met by implementing CRM dimensions and criteria of this research.

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