# The CRM Models
# For Agriculture Department
# in The Government of DIY

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*Abstract*—**Agriculture Department in the Government of DIY is in the government agencies that have implemented e-government. It is intended to provide a service oriented customer satisfaction. But in fact still found service to the customer is not optimal. It is characterized by the variety of customer dissatisfaction. The purpose of this research is to design a model of CRM as a reference for future application development. Research method begins with observation, then analyzing CRM data with the approach of Operational, Analytical and Relational CRM. After that, designing CRM with three types of architecture that data architecture, application architecture and network service architecture. CRM Framework Model is produced by integrating the components of the architecture above by adding media services to be provided. The final step to test the feasibility of the model of the respondents.**

**Results of this research is a model of IT-based CRM and recommendation as a guide in developing a future application, which is expected to improve services to increase customer satisfaction.**

*Keywords*-**Customer Relationship Management, E-Government, Agriculture, Customer Satisfaction.**

## I. INTRODUCTION

THE growth of population in an area very rapidly, the traditional system of public service can no longer adequate and accommodate the needs of the growing population. The development and rapid advances in information technology and the potential use was widespread, opportunities for accessing, processing, and utilization of information in large volumes quickly and accurately. Reality has shown that the use of electronic media use is a very important factor in a variety of international transactions, particularly in the public service transactions.

Agriculture Department is a part of the government office of the Special Region of Yogyakarta, which has the task of carrying out the affairs of local governments in the field of agriculture, deconcentration and assistance tasks given by the government [1]. Under the supervision of the agriculture department, the Agriculture Department in the Government of DIY task and function in accordance with the provisions that have been issued by the governor DIY listed in regulation Governor of Yogyakarta Special Region No. 44 of 2008 on details the duties and function of the Office and Technical Implementation Unit at the Agriculture Department in the Government of DIY and regulations governor of Yogyakarta

Special Region No. 44.1 of 2009 on details of the duties, functions and official description of the activities and technical and operational units in the Agriculture Department in the government of DIY. In performing its duties, the Agriculture Department of special unit or section managers and information technology in order to help manage data and information from subpart PI (Program and Information).

Jogja Cyber Province is the blueprint that became the benchmark development of e-government in Yogyakarta that transform service-oriented customer service (public, agencies as DIY, the district administration and the central government) uses the concept of Customer Relationship Managemant (CRM), information, and knowledge that utilize information and communication technology as an accelerator of development of the province a competitive, comfortable, independent, efficient, and effective. Services based on Information Technology [2].

## II. RELATED WORK

CRM is a discipline for improving customer management through changes in business processes, people, organization and technology [3, 4, 5]. CRM divided into 3 sub-systems, namely Operational CRM, Analytitical Relational CRM and CRM. Operational CRM includes customer display interface with software such as sales automation, marketing automation linked with existing business processes. Analytical CRM covers the collection, extraction, interpretation and reporting of customer data. While Relational CRM includes all variations of the relationship between the customer with organizations such as via email, phone, fax, or web page [6].

A key determinant of the success of a CRM program in the public sector in the form of improved services to the public efficiently over the phone, face to face, mail, internet, SMS, etc [4]. CRM is a technical term which is a mix of methodologies, software and the Internet, which is used by the company to achieve its objectives through the identification of customer satisfaction [7]. This software addresses the customer life cycle management. This system manages the company's interaction with customers today and the future by involving the technology to organize, automate, and synchronize business processes. CRM application is an essential tool for companies to grow and help improve customer satisfaction [6].

Research [7] states e-government can be applied to financial transparency. This is done by utilizing the features of the web owned by the local government. The result obtained is no

indication of the digital divide between the local level and among local governments on the island of Java with regions outside of Java. In a study in the Chinese government [8] discussed key factor in the successful implementation of e-government in China. The results showed that the government's capacity is positively related to the effectiveness of the implementation of e-government. Moreover, environmental readiness and organizational support are also positively related to the effectiveness of the implementation of e-government.

Research on CRM in the form of designing a model of Customer Relationship Management product postpaid [9], Useful and convenient as it helps them to find the information that they want in the shortest time stated in the business world [10], communication with customers is the trigger and determine the success of the company's business. The telecommunications company faces severe challenges in retaining customers associated with the development of information technology and the rapid growth of the company's competitors. One solution to overcome this problem is to implement CRM [11]. The design of the model is done by implementing CRM. CRM strategy is divided into three, namely Operational CRM, Analytical CRM and Relational CRM.

## III. RESEARCH METHODS

### A. Methods of Collecting Data

The method of data collection in this study are as follows:

1) Interview

This method is used as a means to find the data are complete and in accordance with the needs required in research in the Agriculture Department in the Government of DIY. With this method will ask some question how the ins and outs of the Agriculture Department and how to find accurate data, how exactly the service and ways of working in the Agriculture Department.

2) Observation

A method performed by observing directly the Agriculture Department. By examining directly, it can be obtained the information from the problems that occurred in the Agriculture Department, and observe the business processes that are running now to get the data to be used in the modeling process CRM of data analys.

3) Survey

The method is performed by using a questionnaire addressed to the staff of the Agriculture Department to be able to determine the maturity level of analysis and design solutions.

### B. Methods of Analysis

The methods of analysis in this study are as follows:

1) Analysis of Current Conditions

Analysis of current conditions will be analyzed of all business processes that are running at the moment, data customer, SI and IT use, and reviewing all of the information related to business processes.

2) Analysis of Conditions Expected

In this process determined the expected conditions the Agriculture Department related business processes, information technology will be able to support the smooth running of the CRM. Adapted to the vision and mission set that makes the accelerator agricultural realizing strong, independent, commercial, and competitive and resource potential based on local culture and sustainable.

3) Analysis of GAP

In this process identifies business evaluation in the present, or current with the conditions set previously. GAP analysis in terms of the perspective directions of the organization, processes and information technology organizations [12].

4) SWOT Analysis

SWOT analysis is a method to describe and evaluate the condition of an issue, project or business concept is based on internal factors (inside) and external factors (outside) ie Strength, Weakness, Opportunities and Threats. This method is most often used in business evaluation methods to find strategies that will be done. SWOT analysis only describes the situation that occurs not as a problem solver [13].

5) Modeling Method with COBIT 4.1 CRM Customer Perspective

In modeling CRM using the COBIT 4.1 Customer Perspective will discuss some of the important pillars in making CRM model.

6) Feasibility Model

At this stage of the testing carried out by way of explaining the theory of CRM (Customer Relationship Management). Then the respondents were asked to comment on whether the modeling of CRM has been in accordance with the requirements of the Agriculture Department oriented service to customers, as well as a list of questions to answer questionnaires [14].

7) Recommendation CRM

Provide recommendations relating to the results of the modeling CRM based on model testing. Recommendations are expected to give change in accordance with the goals and objectives the Agriculture Department.

## IV. RESULTS AND DISCUSSION

After the data search, analysis of current conditions, expected conditions analysis.

### A. Analysis

GAP analysis and SWOT analysis, the next step is the analysis of the needs of the Agriculture Department in the Government CRM DIY with COBIT 4.1 for the development of CRM systems.

A data processing by giving questionnaires to staff in the Field of Horticultural Crops section and then processed using the COBIT 4.1 GAP get the final result.

Assessment is done by considering the 6 (six) attribute of maturity which includes:

1) Awareness and Communication (Awareness of the importance of running the process).

2) Policies, plans, and procedures (policies, standards and procedures related to the process being run).

3) Tools and Automation (Application form Information Systems and Information Technology).

4) Skills and Expertise (HR skills and expertise in running processes).

5) Responsibilities and Accountabilities (Roles and responsibilities associated with the process)

6) Goal Setting and measurement (size and performance assessment in the running process).

Results of the maturity level as shown in table 1 and figure 1 example to illustrate the maturity level to manage quality.

Table 1. Summary of percentage level of maturity

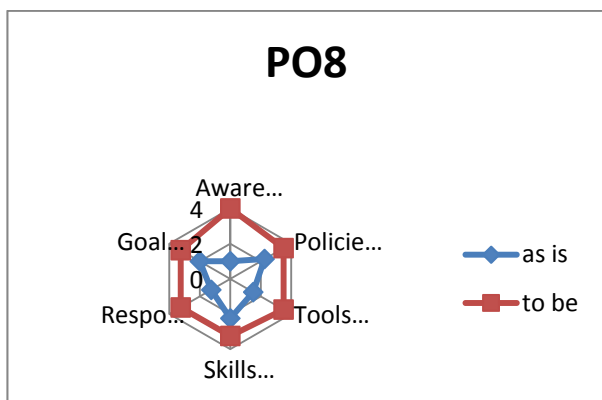| No | Code | Process | *As-is* | *To-Be* |
|----|------|---------|---------|---------|
| 1 | PO8 | Managing quality | 38% | 46% |
| 2 | AI4 | Enable operation and use | 67% | 67% |
| 4 | DS2 | Manage services external parties(third-party) | 54% | 50% |
| 7 | DS7 | Educate and train users | 58% | 42% |
| 8 | DS8 | Manage incidents and damage | 42% | 54% |



*Figure 1: Graph the maturity level to manage quality*

Architectural design of the application is required to manage the data and support the business functions in the Agriculture Department. The application architecture is an application of what is needed to manage the data and provide this information. This can be explained by the Matrix functions vs organizational. The table is a cross between a candidate mapping applications to existing business functions. Cross mapping of candidate applications with the functionality described in Table 2.

Table 2. Functions vs Organization.

| Application | Head of Department | Head of Division | Section Chief | Staf | General public | farmer | Other agencies |
|-------------|--------------------|------------------|---------------|------|----------------|--------|----------------|
| Application Information Service of Horticultural Crops | | | 2 | 1 | 3 | 3 | |
| Application of expert systems pesticide use horticultural crops | | | 2 | 1 | 3 | | |
| Registration Application guidance / training | | | 2 | 1 | 1 | | 3 |
| Application engineering drafting pesticide use horticultural crops | 3 | 2 | 2 | 1 | | | |
| Applications land management and horticultural crops | | | 2 | 1 | 3 | | |
| Application services horticultural crops seeds | | | | 1 | 3 | 3 | |

### B. Development of CRM Model

Distributed Network Architecture of CRM, describes the modules whatever is Agriculture Department can be seen in figure 2.
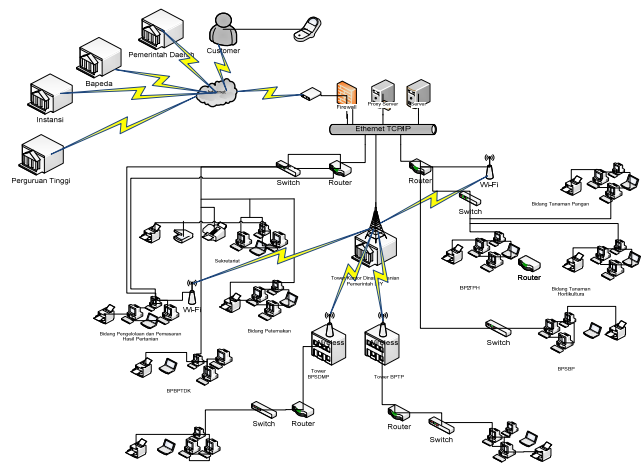


Figure 2. Distributed Network Architecture

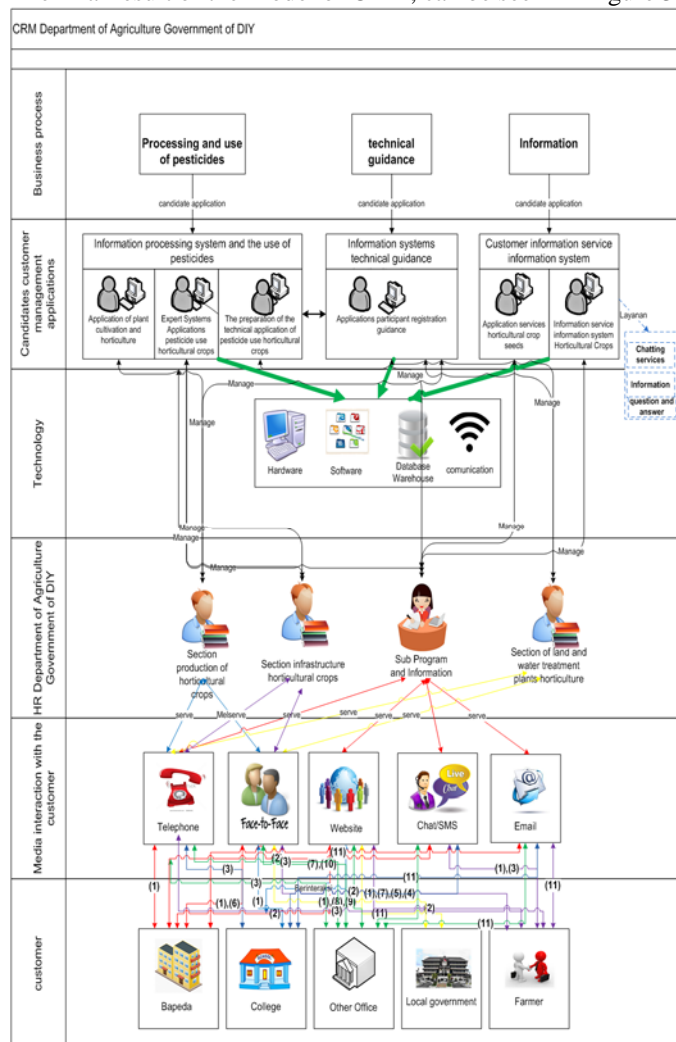The final result of the Model of CRM, can be seen in Figure 3.



Figure 3. The CRM models of Agriculture Department

## V. CONCLUSION

Model of Customer Relationship Management in the Agriculture Department in the Government of DIY made by modeling the system with the viewpoint of business process and calculation of required service-oriented use calculation techniques COBIT, and permanently developed with entered into the right of information systems and customer satisfaction into every stage development of e-Government.

Have generated model of Customer Relationship Management eligible to be used as reference in making changes to the development of e-Government in the Agriculture Department in the Government of DIY.

## ACKNOWLEDGMENT

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