A DECISION SUPPORT SYSTEM FOR THE PROMOTION CASE STUDY AT PT. AUTOCHEM

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ABSTRACT

In information era, the development of business and product must align with the policy and organization strategy. To adapt the needs of business, organization must flexible in aligning the business strategy with Information Technology. Even the business process are getting complex, the business itself will raise the entry barrier for new entrance and other rival to follow and imitate the process. This condition will make organization always need information system in supporting their analysis to make an organization decision for operational and strategic. The organization development will raise the need of information system. The management needs information more comprehensive and related to many stakeholders, internal and external. The existence of Business Analysis will create business intelligence to get the business data more detail, analyze and transform the data into the information needed by management. By using the data from business intelligence, management can make a strategic decision and make a business projection more accurate. In certain condition, the role of information system is very important especially when the scale of organization getting bigger and they needs information support to their organization development. At this time, the needs of information system is lack of the expert and competence analyst in implementation. The goal of this paper is to create Decision Support System to help management to get solution to their marketing needs to serve more customer or client. The success of their business is depend on management capability to get the opportunity and take advantage in their dynamic and unpredictable environment. Management should consider the external factor which is uncertain and take a prevent action. They do data identification, process data to get information to lowering the threat and find the opportunities. The information will increase their competitive advantage and bring organization to better position among rival competitors. Autochem Industry Inc. is a carcare company since 2009. With 6 branches, they are using local distributor to expand their market. When they grow to 28 branches in 2014, they are shifting the marketing strategy from B2B to B2C, and they need decision support system to decide the marketing strategy.

KEYWORDS: *DSS, Decision Support System, Retail*

I. BACKGROUND

Since the Personal Computer introduced in late 1970s, the evolution of information technology is very fast. In the middle of 1990-s, the portable device such as laptops and notebooks changed the people using computer to get data and information. Computer change organization behavior in working and do business radically. The internet evolution make communication and data distribution getting easier. This condition increase legal, ethics and security issue to information itself. Organization put attention to these issue and consider more effective system to enable them securing the environment effectively and efficiently. In one side, Information technology can support organization to gain differentiation and competitive advantage to organization and the other side, the information technology can be a threat to organization if they can not handle properly.

As a support system to company, Information technology must have a important roles as a strategic tools for company. Organization does not need Information Technology only for support but their roles must be shift to be a enabler in each functional system. Decision Support System as one of IT Tools is using as an application to collect, store, process (analyze) and give solution to help user take business

decision better. The scope of application coverage from store information, query and reporting according to user needs. In other words, Decision Support System is a main activity needed by most management to change the raw data to information for business process decision system. Decision Support System help management to grab the detail of inventory, service level, promotion, product quality as well as consumer who move to other competitor.

One of the effective data management is data mapping through organization. Data mapping is covering all operational data including: customer, order, product, market, vendor, human resource, etc. Those data will be used to support organizational operational, such as customer demand which is has strong relation with marketing data. Data modelling show the organization structure for all process, to find all data related with user needs in making decision. The next step is allocated the data into groups, to make data more structured to have analysis more easier (data mining). Data mining can find relation data with tree diagram system or neural system. Data mining usually as a decision support system for organization with large data.

As a background, PT Autochem is a private company in vehicle service industry with more than 30 branches with more than 500 employees and 250 product variant. In 5 years ago, the industry starting with 6 branches, 100 employees and 50 product variant.

II.   ORGANIZATION OF MANUSCRIPT

Introduction in this paper is starting with the background of Autochem Industry. The strong company in distributing vehicle service industry give the clear organization to be analyzed. The problem statement is clear, to give the understanding about the distribution problem with agents. The literature review give some perspective about Decision Support System in handling the problems. Theory from some authors show how the Decision Support System related with other system to produce the good information to DSS User.

The result of the analysis is implementing DSS system that suitable with DSS user needs. The Conclusion and Future work is a summary of the paper and the suggestion to expand this research to the wider problem and to get more depth analysis for better improvements.

III.   PROBLEMS

Earlier time, PT Autochem is a small company with 6 branches. They do marketing with agent for outreach area. The problem arise when agent do promote only selective product. They prefer do marketing for fast moving product and not focus on new product which need more effort to product knowledge to its customer. When Autochem start to develop new variant since 2009, the new product is only grow in their branches, not in the agent. This condition makes organization change its business process and marketing, and start to open the new branch for every new potential area. The opening of new branch threat the agent and put organization in conclift with agent. When organization do direct promotion to customer with the same price and better service, agent has lost its potential income. The challenge is how the organization can adapt the culture of each area with their marketing policy. The sales force also must have the capability to give all product information, maintain the selling process, until the product sold to customer.

The research questions are: How decision support system can give a solution to PT Autochem, and How to build a computer based decision support system for promotion strategy implementation in PT Autochem?

The limitation of this research is on the decision support system to help in implementation promotion strategy in Autochem, coverage area is only for Jakarta and Tangerang, and the product is limited to car care product sales and promotion.

IV.   GOALS

The benefit of this research is give Autochem the detail and accurate information for Sales Information System in Autochem. In functional, they know the sales detail for product developed by Autochem and use for marketing strategic plan in short term, mid-term and long term. By using this model, management can make a decision more accurate and effective for marketing and sales.

V. DECISION SUPPORT SYSTEM

According Ramesh Sharda (2014), *Decision Support and Business Intelligence Systems* give the only comprehensive, up-to-date guide to today's revolutionary management support system technologies, and showcases how they can be used for better decision-making. According Power (1999), Decision Support System is a computer based system to help decision maker by using data and model to identified and give a solution to problem and to help to make a decision. According Turban (2005), Decision Support System Model can described as follows:
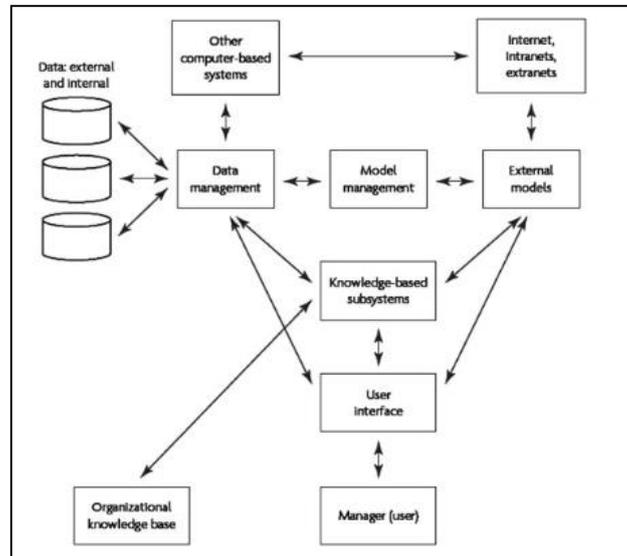
Figure 1. Decision Support System Component

Main characteristics of DSS is the design to help manager in make a structured and semi-structured decision process to enable organization more efficient and effective. Elements in database management can described as follows :
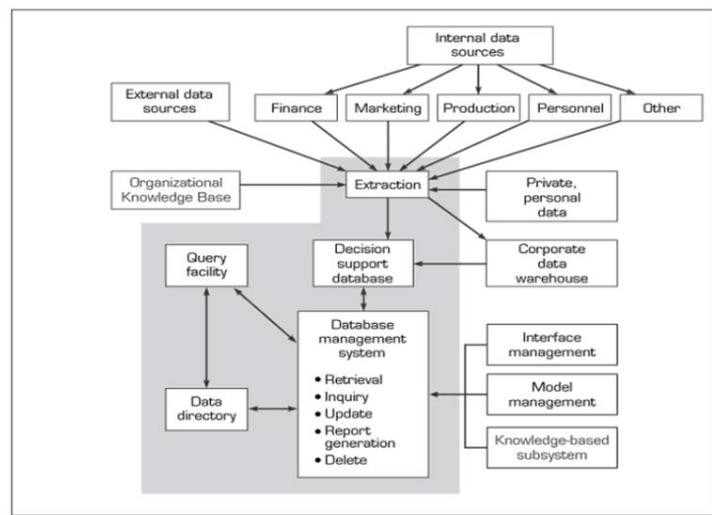

Figure 2. The Structure of the Data Management Subsystem

According Sage (1991), there are 3 basic component of DSS : Database Management System (DBMS), Model-base Management System (MBMS) and Dialog generation and Management System (DGMS). DSS Provide design and data logical structure to be used with user for interaction. MBMS is doing data transformation to information for decision makers. MBMS enable user to develop model for unstructure problem. DGMS is improve user capability to use and get advantage of DSS. The relation between 3 basic component is illustrated as follows:
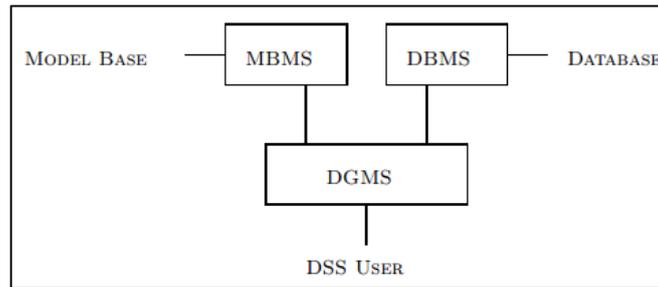
Picture 3: DSS Architecture (Sage, 1991)

VI.   METHODOLOGY

For collecting data in this research, there are three methods : observation, interview and book reference. Observation is done by collecting data directly to field thru observation to some research object from individual sample. Interview do the data collecting by asking some questions in research place. For completing the information, we are using reference methods, to get additional information thru existing literature. The data resources is clustered into : Primary data and Secondary data. The stakeholder and staf of restaurant become primary data, and Books, Journal and other literature references becoma secondary data. The analyze part do the organization analysis, input analysis, process analysis, and output analysis.

VII.   DISCUSSION

Management Autochem using ERP to support organization in expand their branches to more cities in Indonesia. Management implementing cloud based ERP and support online virtualization such as Acumatica with C# language. Automatica have accounting system module, production module and HRM module. Focus on this research is in accounting system module, specifically is sales. Sales is beginning with customer order in Sales Order. When stocks available, process continue to shipping delivery and process invoice and payment. The sales order menu as follows :
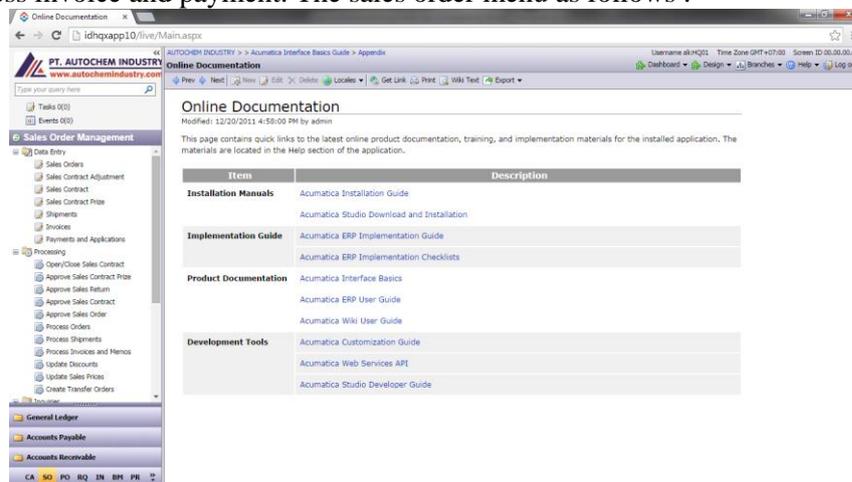

Figure 4. Menu Sales Order Acumatica

VIII.   IMPLEMENTATION

Implementation Acumatica for online process is efficient and useful for user, they can monitoring and create sales transaction report in realtime. Unfortunately the report is operational and managerial level. To support decision maker in management level, the information is continue to higher level to top management or executive level. For rawdata, ETL from Pentaho Data Integration is capable to support raw data report as described as follows :
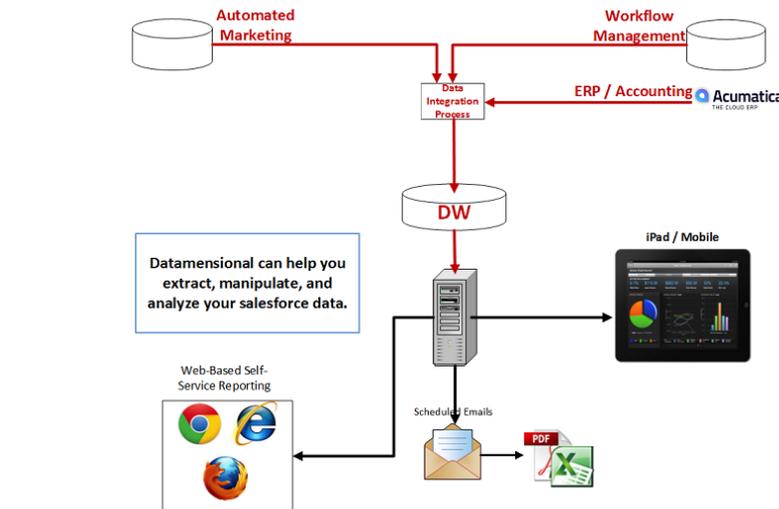
Figure 5. Data Integration Concept

From the design concept of Decision support system, the sales department's report display as follows :

Figure 6. Sales Dashboard

From the dashboard, top management can display the analyze of sales per customer category, branches, function of product and province as follows :
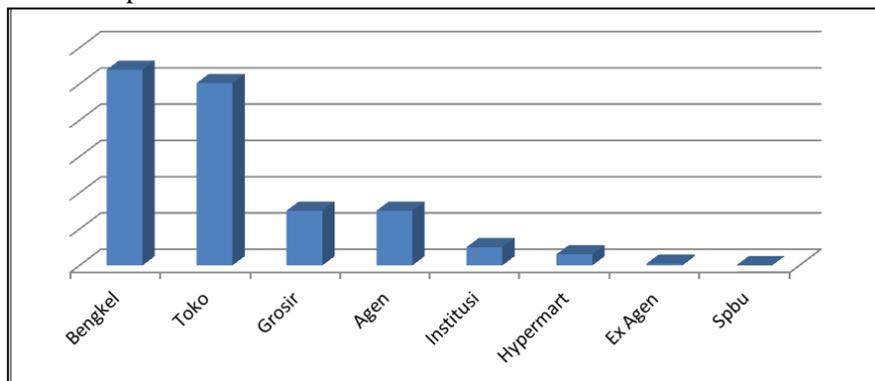

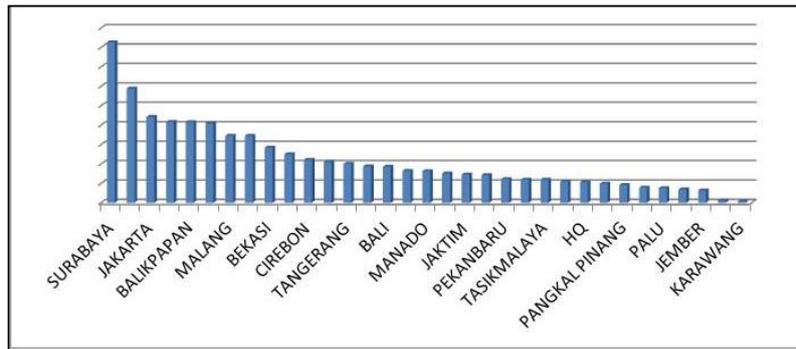**Figure 7.** The Sales Analysis based on Customer Category
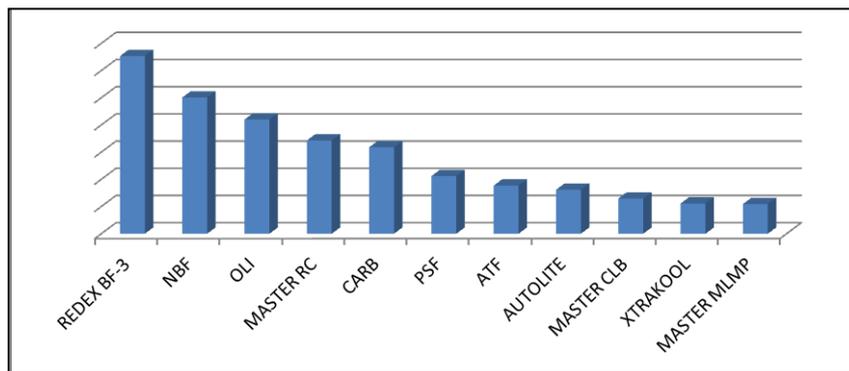
Figure 8. The Sales Analysis based on Branch

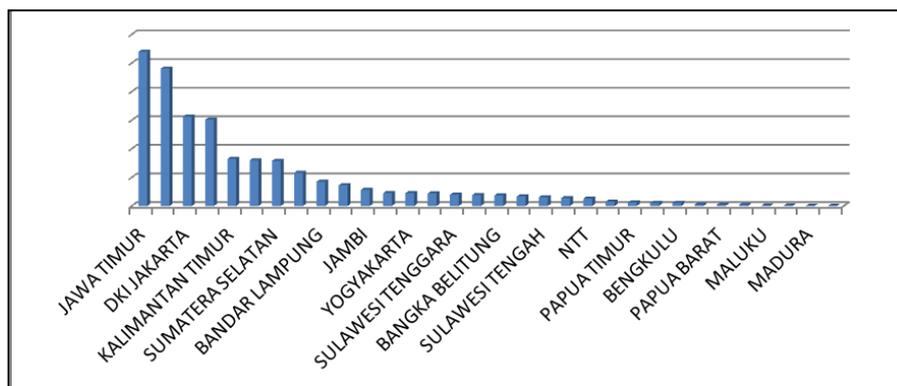**Figure 9.** The Sales Analysis based on Function of Product

Figure 10. The Sales Analysis based on Province

IX.   CONCLUSION

Based on sales analysis, the data could be grouped based on many dimensions such as function of product, customer category, province and branches top management can get overview of sales data and historical data including the previous strategy implementation. Top management can also know the promotion strategy implementation in short term and long term.

X.   FUTURE WORKS

In Decision Support System implementation, system can improve to respon the future needs with additional variable for determine the promotional strategy according to its culture in each area. Later, DSS will be developed to the procurement system to prepare the inbound logistic (raw material), production, outbound logistic and delivering system to their markets.

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