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INFORMATION SYSTEM OF MARKETING MANAGEMENT AT REYMART GROCERY STORE BASED ON ENTERPRISE ARCHITECTURE PLANNING METHOD

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Abstract
Grocery stores are currently experiencing increasingly fierce competition in the business world, which makes business people have to think hard in formulating strategies to face competition. In formulating a profitable strategy, business people can take advantage of technology. Utilization of technology and information is also very necessary for an organization or company. This is necessary because the development of increasingly rapid and complex information systems will affect the processes and business developments which are currently running. Therefore, one way to meet business needs in accordance with the organization's business development is to develop an enterprise architecture which uses a methodology such as Enterprise Architecture Planning (EAP). This methodology is a method used to approach data quality planning by looking at the business needs of the organization. The outputs produced are in accordance with the expected results and can describe stakeholder goals in describing plans to develop a system or set of systems. In this study, the author uses the Enterprise Architecture Planning (EAP) method to support the business and plan to implement the architecture. Architecture here is like blueprints and drawings or models. The blueprint generated from the Enterprise Architecture Planning (EAP) process will be used as a guide for the creation of a blueprint in strategic planning for the Management Information System and overall marketing at the Reymart store.

Keywords:
EAP;
Reymart Store;
SWOT;
Technology;

I. INTRODUCTION

Grocery store is currently experiencing competition in the business world which is getting tougher so that this makes business people have to think hard in formulating strategies to face competition. In formulating a profitable strategy, business people can take advantage of technology. Utilization of technology and information is also very necessary for an organization or company. This is necessary because the development of increasingly rapid and complex information systems will affect the current business development process. [1] Therefore, one way to meet business needs in accordance with the organization's business development is to develop an enterprise architecture using a methodology such as Enterprise Architecture Planning (ERP).

Research conducted by Vivi Indra on Enterprise Architecture Planning at CV. Grade Zangrandi with this EAP method performs analysis and system design which has been adapted to the company's strategy. The applications based on key operations are production information systems, maintenance information systems, sales information systems, financial information systems, employee managing information systems, and Single Sign on Service (SSO) applications. The applications based on support are database server backups and email. The application used for the company's strategy is a complaint information system. All of these applications are website-based so they are easy to maintain [4]. Research conducted by Hilda Dwi Yunita entitled Information System Architecture

Planning using the EAP model at the General Criminal Investigation Directorate of the Lampung Police. This research succeeded in making a blueprint (data, application and technology) which is the basis for the improvement and development of information systems at the Directorate of General Criminal Investigation at the Lampung Regional Police in improving the quality of services to the public and an application architecture consisting of 3 application groups with 11 applications, a technology architecture consisting of 22 technology principles, technology configuration and business architecture and distribution of technology foundations with business applications and functions. This research is only a description of the information architecture (blueprint) and only defines business needs, not designing business architecture. Therefore, this still needs further development [5][1].

Based on the results of research studies which have been carried out by previous researchers, researcher conducted research at the Reymart Store with the aim of developing strategies, procurement and utilization of information systems in carrying out business plans and realizing business goals with the Enterprise Architecture Planning method on the marketing of staple foods which is expected to describe a plan to build a system or a set of systems to improve the performance of the Reymart Store so that it can assist in strategic planning of information systems.

II. THEORETICAL BASIS

2.1. Literature review

In conducting this research, researcher took five research results which have been carried out by previous researchers with various different research objects with the aim of getting an overview of the concepts offered by each researcher in solving problems using the Enterprise Architecture Planning (EAP) method. Literature review is to support the statement so that researchers can describe the results of various previous studies related to research journals which have been carried out previously which can be seen in the following table:

1st Table: Literature Review

Number	Writers	Titles	Results
1	Jody Sprobo, et al (2019)	Design of Pesticide Sales Management Information System on CV. XYZ [2]	Creating a management information system in graphic form for easy decision making
2	Ahmad Khumadi, et al (2019)	Strategy Development of Information Systems and Information Technology at Private Universities in Pringsewu using the EAP methodology [3]	System strategy development using the EAP method to produce better and empowered managers in overcoming global competition
3	Vivi Indra, et al (2018)	Enterprise Architecture on CV.Grande Zangrandi with the EAP method [4]	Creating applications which are used for company strategy: a complaint information system, which is all website-based
4	Hilda Dwi Yunita, et al (2018)	Information System Architecture Planning using EAP Model at the General Criminal Investigation Directorate of Lampung Regional Police [5]	Creating a blueprint for the improvement and development of information systems and improving the quality of service to the community
5	Seni Meilani Putri, et al (2020)	Architectural Design of Electronic Medical Record (EMR) using EAP Enterprise Architecture [6]	Designing an EMR architecture which minimizes errors in data storage and processing, as well as recording medical records

2.2. Management information System

Management Information System (MIS) is an information system which is used to present information which is used to support operations, management, and decision making within an organization. MIS usually provides information for the organization's operations. [7]. MIS is also often referred to as a management alert system because this system alerts users (usually management) to problems and opportunities [8]. It can be concluded that MIS is a place to present information, management in decision making for management information systems.

2.3. Marketing strategy

Marketing Strategy is defined as a set of goals and objectives, policies and rules which provide direction to the company's marketing efforts from time to time, at each level and its references and allocations, especially as the company's response to the ever-changing competitive environment and conditions. According to experts, strategy is a tool to describe guidelines for allocating resources and organizations [9].

Marketing is a process so that entrepreneurs can fulfil and influence consumers so that they are interested, happy and then buy and are finally satisfied with the products they buy. Marketing is also a human activity which is appointed to meet the needs of society through a process of exchange [9]. Marketing strategy is something which consists of all the steps used to place the goods being traded into the hands of buyers and pay attention to the conditions and changes in the company's environment, both internal and external, which can ultimately achieve the stated goals.

2.4. Enterprise Architecture Planning

EAP is an approach created by Steven H.Spawak to build enterprise architectures based on data driven and business driven. EAP is the process of defining an architecture in terms of using information to support the business and plans for implementing that architecture [10]. According to Steven H.Spawak, the use of the term architecture consists of data architecture, application architecture and technology architecture. The architecture here is like a blueprint, depiction or model. Basically, EAP is not designing the business and its architecture, but defining the business needs of the enterprise. The word "define" in Spawak's sense is to define business and define architecture. So, EAP is not a design but a definition. While the word "plan" in general is talking about the definition of what architecture is needed and the support plan is defined as when the architecture will be implemented [11].

III. RESEARCH METHODS

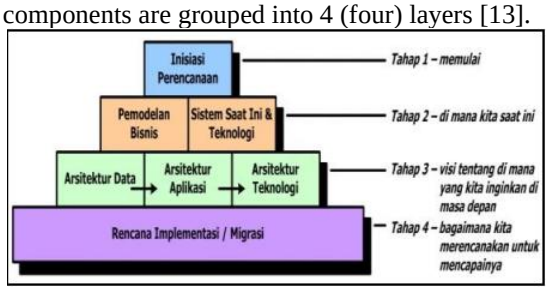
3.1. Data collection

This stage is carried out in two ways:

1. Direct observation to the research location (observation) to see directly things or data related to the material needed in the preparation of research such as studying documentation, organizational goals and structures, business processes, and existing information technology policies.
2. Interview or question and answer to Reymart Store related to IT or with parties related to research [12].

3.2. EAP Method Concept

The enterprise architecture strategic planning method used is EAP. EAP has 7 (seven) main components which show the stages for determining and planning the implementation of information system architecture. These seven main components are grouped into 4 (four) layers [13].



1st Figure: Components and Layers of Enterprise Architecture Planning

The following is an explanation of the stages in Enterprise Architecture planning:

1. **1st Stage: Beginning**
   Planning Initiation
   This stage consists of determining the methodology used, who is involved, and what tools will be used. The result of this phase is a work plan for the Enterprise Architecture Planning and management's commitment to proceed to the next six stages.
2. **2nd Stage: Understanding Current Condition**
   Business Modelling
   There are two stages in this layer:
   a. Business Process Modelling
   This stage aims to build a knowledge base about the business and information which the Enterprise currently uses. This stage is a process for defining the business in order to provide a consistent, comprehensive and complete model of the enterprise business so that it can be used to define architectures and implementation plans. Business

modelling is done by identifying and defining key business areas using the Value Chain Model to highlight activities within the business. At this stage, a matrix of relations between functions and organizational units is also made to determine the responsibilities of each organizational unit for a business function.

b. Current system and technology

This stage aims to define and document the application systems and technology platforms used by the Enterprise to support current business functions because enterprises which have been running generally already have systems and technology for their information system applications [13].

3. **3rd Stage: Future Plan**

There are three stages in this layer:

a. Data Architecture

This stage aims to identify and define the main types or data entities needed for the enterprise to support the business functions which have been defined in the business modelling stage and then relate these data entities to the enterprise business functions.

b. Application Architecture

This stage aims to identify and define the main types of applications needed to manage data and support enterprise functions.

c. Technology Architecture

This stage aims to identify and define the technology principles needed to provide an application-enabled environment on pre-arranged application architecture to manage data and support business functions.

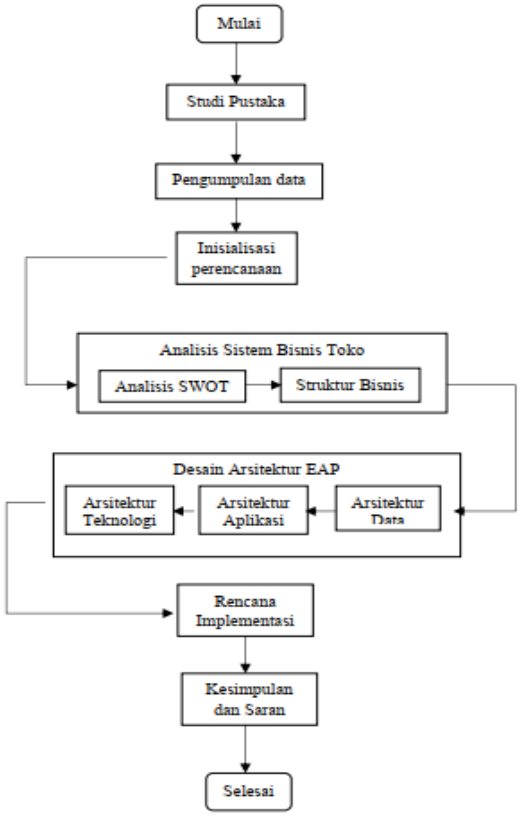
4. **4th Stage: Achievement Strategy**

Implementation/ Migration Plan

This stage defines the sequence for implementing the application, schedule for implementation, cost/ benefit analysis, and proposed path for emigration from current state to desired state [13].

3.3. Research framework

The research framework is the big picture in conducting research.



2nd Figure: Research Framework

IV. DISCUSSION

4.1. SWOT Analysis

SWOT (Strength, Weakness, Opportunities, Threat) is a strategic planning technique to evaluate a project which is currently in progress or is currently in planning. SWOT analysis is made to make it easier for developers to make projects more focused. Here is a SWOT analysis on a Reymart store. SWOT analysis can provide information about the state of the company and can be used in choosing policies and plans for future business developments [14]:

1. **Strength**

Strength is a resource, skill or other advantage relative to competitors and the market needs of a company at a Reymart Store. The strength analysis is:

- Availability of personnel resources
- The quality of service at the Reymart Store
- The infrastructure is quite complete
- The price of the product is relatively cheap and complete

2. **Weakness**

Weakness is a serious lack of natural resources, skills and abilities which hinders the effective performance of

the Reymart Store. The analysis is as follows:

- ✓ Entering data which is still manually
- ✓ Errors in recapitulating sales data and prices of goods in the store
- ✓ Marketing which is not extensive

3. Opportunity

Opportunity is the main favorable situation or trend in the corporate environment at Reymart Stores. The analysis is:

- ✓ Good service for consumers at Reymart Store
- ✓ Recap data which is more detailed
- ✓ Expanded marketing
- ✓ More complete product capacity
- ✓ Addition of manpower
- ✓ Capital increase

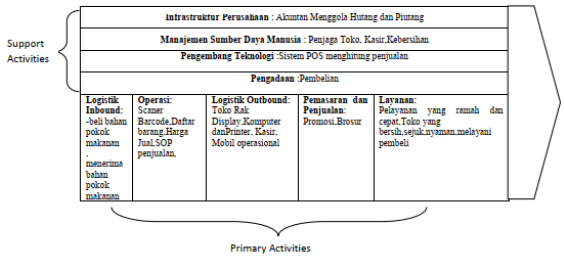
4. **Threats**

Threats are a major unfavorable trend in the corporate environment at Reymart Store. The analysis is:

- ✓ There are competitors in store marketing.
- ✓ Increased infrastructure needs in line with the growth of larger stores.
- ✓ The absence of IT experts in Reymart stores

1.2. Business Modelling

At this stage, the researcher conducts an analysis by analyzing in-depth business functions of each collection of activities using the value chain which is a method for analyzing activities at the Grocery Store, both supporting activities and ordinary activities.



3rd Figure: Value Chain

Value Chain is the main thing to generate value for customers. The following is the value chain at the Reymart Store [12].

a. The primary activities in this chain are:

1. Inbound Logistics: activities related to receiving, storing, and disseminating input
2. Operations: activities which transform inputs into final product outputs
3. Outbound logistics: activities related to distributing products/ services
4. Market & sales: activities related to marketing and sales such as market research, promotion and so on

b. Support activities in this chain are:

1. Firm infrastructure: are activities, costs and assets related to general management, finance, security and safety of information systems and other functions.
2. Human resources management: consists of the activities involved such as acceptance with opinions, training, development and compensation for all types of personnel and developing the skill level of workers.
3. Technology Development: activities related to costs related to product process improvement, equipment design, software equipment development, telecommunications, databases and development of computer-based support systems.
4. Procurement: activities related to how resources are obtained such as the purchase function of inputs used in the value chain.

4.3. Implementation Analysis

1. Data Architecture

The data architecture created is to group data based on data entities which have been defined. Entities which have been defined can be used to support business functions at the Reymart Store and as a marketing strategy. Therefore, defined data entities should be able to demonstrate support for these key business functions. The list of marketing data entities at the Reymart Store is as follows:

2nd Table: List of Data Entities

Business Entity	Data Entity
Service Entity	1. Entity of service place 2. Consumer Entity 3. Joint Operational Entity

Warehouse Entity	1. Item Entity 2. Item Bon Entity 3. Incoming and Outgoing Goods Report Entities 4. Asset Entity
HR Entity	1. Employee Entity 2. Employee Salary Entity 3. Employee Performance Entity
Financial Management Entity	1. Budget Entity 2. Financial Statement Entities

2. Application Architecture

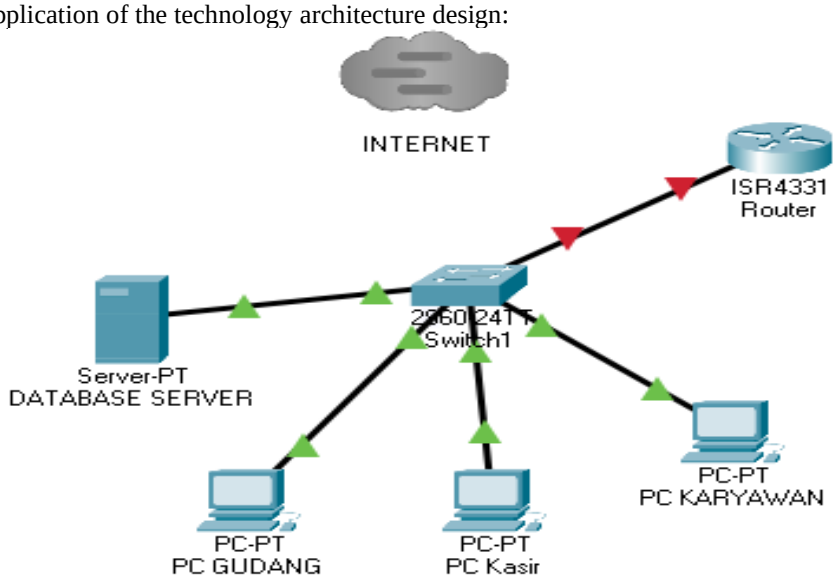
Application Architecture is done after defining the entity in the Data Architecture. The application definition is needed by the company to support business processes and database management in the company. Application architecture is a description of the capabilities and benefits of applications which are used to support business processes. Application architecture is shown in 3rd table.

3rd Table: Application Architecture

Activity	Needs	Description
Store Warehouse Service	Requiring a system to provide information and improve warehouse logistics services and systems for managing assets and goods in the store/ warehouse	Developing an existing system
Human Resources (HR)	Requiring a system to manage employee data	Developing an existing system
Marketing, Sales and Customer Service	Requiring an application to process sales and service to consumers	Developing an existing system
Financial Management	Requiring an app to manage finances, employee salaries and payments	Creating a new system

3. Technology Architecture

This stage aims to identify the technology needs (hardware and software) needed in the business environment in order to be able to run applications based on the application architecture to manage data based on the data architecture which has been created. Based on the principle definition of the technology platform created, it can be defined that the technology platform to be used is network technology with the Client/ Server model. The next step at this stage is to create a relationship matrix to see the relationship between the technology which has been identified through the technology platform used with the business functions and application of the technology architecture design:



4th Figure: Technology Design

4th Table: List of Technology Architectures

Type	Principle
Operating system	User friendly
	Supporting the use of hardware and applications built
	Supporting the network
Hardware	Documented
	Based on the need for recommendations
	Qualified and restricted
	User friendly
Software	Having documentation
	Having user requirements and costs
Communication and Collaboration	Using Client server architecture
	Communication can be by telephone
Data storage	Data is easy to access and understand
	Standard data format
	Data storage selected according to store needs
Network	Stable connection
	Easy installation

4. Implementation Plan

Implementation of Enterprise Architecture is made for planning information systems and developing information systems which already exist or are currently running. The application development was carried out because of the need for a marketing strategy for the Reymart Store for the next few years. Application development is also tailored to the needs of the Store and readjusts the technology needs that must be provided to support applications and data by looking at real conditions on the spot.

V. CONCLUSION

Based on research conducted at the Reymart Store, the application of the EAP method is a marketing strategy which can help align existing businesses and technologies which are already running. This method can identify starting from business processes to planning the implementation of management information systems, where the EAP method is the method used to approach data quality planning by looking at business needs. In the future, it is hoped that the information system built can be developed again, so that it will make it easier for customers who want to shop.

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