EXECUTIVE INFORMATION SYSTEM FOR MAYORA BISCUIT DIVISION BASED ON MAYORA MEDIA EFFECTIVENESS ANALYSIS SYSTEM (RAMESYS)

THESIS

by

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Abstract

Food manufacturing industries has become one of the most competitive industries in Indonesia. One of them is biscuit manufacturing industries. Competitors came along from every direction. The best strategies to keep surviving in the game were commenced. One of them is through the promotion activities. Almost every company spent their promotion budget mostly through the television commercial. Since not every company has their in house department to take controls the promotion campaign. That’s why most of them use the services of agencies. These agencies will be the representative of the food manufacturing company towards the television stations. They will do the process of making a media plan (the advertisement campaign plan) until delivering the report on the effectiveness of their media campaign. However it appears that the top management of this biscuit industry needs to know about the impact of their advertising campaign towards their sales number. Since all of the needed information is distributed and not fitted on one page.

In addition, it also appears that agencies may have the tendencies to manipulate the media review in order to fulfill their personal interest towards the company, and it’s undeniable that the turnover among the worker in the agencies is high. That’s why the company cannot give the confidential information, such as the sales number to the agencies.

This thesis is dedicated towards PT. Mayora Indah, Tbk. One of the leading companies in the food industries, and achiever of Top Brand Award from Marketing Magazine. Hopefully it will be useful for PT. Mayora Indah, Tbk. In order to improve analyzing the media effectiveness and link the impact with the sales number.

Keywords: Media review, Sales number, RAMESYS, EIS
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CHAPTER 1

INTRODUCTION

1.1 Background

Mayora is a well-known food producing company, which has been established for 68 years. Mayora is consisting of eight business units and one of them is biscuit division. The following list are containing Mayora’s business unit:

![Figure 1.1 Business Units of Biscuit](image-url)
Figure 1. 2 Coffee Business unit

Figure 1. 3 Wafer Business Unit
figure 1.4 Candy Business Unit

figure 1.5 Noodles Business Unit
figure 1.6 Health Food Business Unit

Health Food

- Energen Cereal
- Energen Milkuit

figure 1.7 Chocolate Business Unit

Chocolate

- Choki-choki
- Danisa Haagelslags
Challenges in Biscuit industries could be one of the toughest in this country. Since, the player has reached 185 companies from all of the country and consists of 400 brands of biscuits. However the competition among these industries has increased dramatically at the era of monetary crisis, since the multinational players keep getting more aggressive day by day. For instance, Arnott’s the biscuit manufacturer from Australia that taking over PT. Helios Food (the child company from Kalbe Group). In addition there were still France Manufacturer (Danone) and also American manufacturer (Nabisco Food).

Mayora Biscuit Division also facing the competition among foreign and local competitor as well. In addition the main ingredient prices couldn’t be increased without any good preparation.
Every company including Mayora biscuit division, that spent the budget in one event or activity, of course would like to know about the efficiency of their budget. They would like to know their SOV (Share of Voice) against the SOE (Share of Expenditure). This condition already anticipated by reading and analyzing the presentation material (media review) that sent by the agency and the data that being surveyed by AC Nielsen. The presentation is on Microsoft power point basis, which contain a report about media activity review that being done by Mayora Biscuit division on Television. This presentation also contains media activity that being done by Mayora Biscuit Division competitor.

Sample of the presentation contain was in the form of spreadsheet, bar chart and pie chart. However, it occurs that the data is too general and to raw, because it will take much time to consume if we would like to analyze the effectiveness deeper. Such when we would like to compare it with other parameter. For example, one of the Mayora’s agencies gave the chart of Monthly TV expenditure by brand that gives the description of the budget that spent on advertisement, sponsorship, or product built in on TV shows. The problem is if we would like to know whether the expenditure could increase the sales by comparing it with the data given before the time that the budget was being spent, or maybe with the data given after the budget was spent. In addition, by reading the presentation material given, we could not analyze the trend about the advertising pattern tendencies that done by Mayora’s Biscuit Division competitor.

For instance, given that the advertising trend that being done by Kraft-
Belvita Milk Biscuit, is to put their advertisement on infotainment programme such as INSERT (INFORMASI SELEBRITI), KABAR KABARI, HOT SHOT, SILET, ADA GOSIP, B2S BLAK-BLAKAN SELEBRITIS. The Reason that I chose the problem was that because it will make the media effectiveness analysis of Mayora became automated. In addition, Mayora will also be able to identify the advertising trend that currently being used by its competitor. Because the RAMESYST will be linked with the sales data, Mayora can keep the confidentiality of their current sales status, without any needs to giving it to the other parties, such as the agency.

Mayora Biscuit Division realizes that the Executive Information System will help the executive to make a decision that has the connection with media activity effectiveness and correlated with sales’ number impacted by the media activity itself. Since to build a good brand image and brand personality, Mayora Biscuit Division has to communicate the brand with clear positioning to the consumer with suitable demography and psychographic condition through the right media and last but not least also with précised timing and power.
1.2 Scope

Creating a system called RAMESYST (Mayora Media Effectiveness Analysis System) in order to help the executive in making their decision based on the analysis of television advertising so that they can increase sales and knowing their competitor weaknesses, without any worries that they have to give the confidential data to other parties. The system itself would have the capability to:

1. Make a media review report for a specific brand with specific time constraint based on AC Nielsen data given by agency.

2. Link the report with the sales data to see the impact of the advertisement.

3. Historical database to compare the previous impact with current condition in a specified inputted parameter.

4. Analyze the linked data between media review report and sales in a national scope.

The system is not capable to:

1. Analyze the linked data between media review report and sales in a region scope.

2. Analyze the combination impact between Above the Line activity and Bellow the Line activity.

3. Optimizing proposed media plan from the agency.
1.3 The Aims and Benefits

- Save more time to analyze the media activity result.
- Faster decision making about the effectiveness of media activity.
- Decision about sales that was being impact by media activity can be elaborated faster.
- To make the analysis become more independent and free from any political bias. The term of political bias here refers to the bias that can be occurred; when the agency tries to change the data that gathered from the AC Nielsen in order to fulfill their political purpose.
- To prevent the data and confidentiality leakage, since the advertising agency turn over trends is very high

1.4 Structures

Chapter two will mostly discuss about the theories and terminologies used in describing the current system in Mayora and also in developing the RAMESYST. Thus, chapter two also will give the theoretical framework that will be used in developing the RAMESYST.

Chapter three will discuss the current system that being used by Mayora and also the problem that happened among the system in a more comprehensive manner.

Chapter four will discuss about the proposed system and the steps to design the solutions for the problem.

Chapter five will present the implementation plan for the system.

Chapter six will be the Conclusion for the thesis.
CHAPTER 2

THEORETICAL FOUNDATION

2.1 Theoretical Foundation

The system will be built based on combinations of various existing methods and theories. This chapter will provide a comprehensive yet compact explanation of the relevant theories that will be used in the development of the system.

This section will describe the theories relating to:

1. The nature of Executive Information System (EIS)
2. The method used in building the system (SAD)

EIS

2.2 Definition of EIS

Computer based system that serves the information needs of top executives. It provides rapid access to timely information and direct access to management reports. EIS is very user friendly, supported by graphics, and provides exceptions reporting and drill down capabilities. It is also connected to internet, intranet and extranets (Turban & Aronson, 2001 p.308).
2.2.1 Two Type of EIS:

1. designed to support top executives
2. Serve wider community of users.

(Turban & Aronson, 2001 p.308).
Figure 2.1 The Decision Making Process of the Executive, Turban & Aronson, R 2001, p.310
2.2.2 The Characteristic and Benefits EIS Quality of Information

(Turban & Aronson, 2001 p.311).

- Flexible
- Produces correct information
- Produces timely information
- Produces relevant information
- Produces complete information
- Produces validated information

User interface

- Allows secure and confidential access to information
- Has a short response time (timely information)
- Is accessible from many places
- Includes a reliable access procedure
- Minimizes keyboard use including infrared controllers, a mouse, touch pads and touch screen
- Provides quick retrieval of desired information
- Is tailored to the management styles of individual executives
- Contains a self help menu
- Include a user friendly interface
- Include a sophisticated GUI
Technical capability provided

- Access to aggregate (global) information
- Access to electronic mail
- Extensive use of external data
- Written interpretations
- Highlighting of problem indicators
- Hypertext and hypermedia
- Ad hoc analysis
- Multidimensional presentation and analysis
- Information presented in hierarchical form
- Incorporation of graphics and text in the same display
- Management by exception reports are provided
- Trends, ratios and deviations are shown
- Access to historical and most current data is provided
- Organization around critical success factors
- Provides forecasting
- Information produced at various levels of detail (drill down)
- Filtering, compressing and tracking of critical data
- Support of open ended problem explanation
Benefits

• Facilitates the attainment of organizational objectives
• Facilitates access to information
• Allows the users to be more productive
• Increase the quality of decision making
• Provides a competitive advantage
• Saves time for the user
• Increase communication capacity
• Increases communication quality
• Provides better control in the organization
• Allows the anticipation of problems and opportunities
• Allows planning
• Allows a search for the cause of problem
• Meets the need of executive

2.2.3 Critical Success Factor

Factors that must be considered in attaining an organizational goal are called Critical success factor. Such factors can be strategic, managerial or operational and are derived mainly from three sources: organizational, industrial, and environmental. Success factors can be at the corporate level as well as at the division, plant or department level. Sometimes it is necessary to consider CSFs of individuals (Turban & Aronson, 2001 p.312).
2.2.4 Critical Success Factor Monitor:

(Turban & Aronson, 2001 p. 312).

• Key problem narratives. These reports highlight overall performance, key problems, and possible reasons for the problems within an organization. Explanations are often combined with tables, graphs, or tabular information.

• Highlight charts. These summary displays show high level information based on the user’s own judgment or preference. Because they are designed from the user’s perspective, these displays quickly highlight areas of concern, visually signaling the state of organizational performance against CSFs.

• Top level financials. These displays provide information on the overall financial health of the company in the form of absolute numbers and comparative performance ratios.

• Key factors. These factors provide specific measures of CSFs, called Key Performance Indicator (KPIs), at the corporate level. The displays are often used on an exception basis to examine specific measures of CSFs flagged as problems on highlight charts.
- Detailed KPI responsibility reports. These reports indicate the detailed performance of individuals or business unit in areas critical to the success of the company.

### 2.2.5 Typical Key Performance Indicator

(Turban & Aronson, 2001 p.313).

**Marketing**

- Market share
- Advertisement analysis
- Product pricing
- Weekly (daily) sales result
- Customer sales potential

### 2.2.6 Analysis

Analytic capabilities are available in EIS. Instead of merely having access to the data, executives can use the ESS to do analysis on their own. Analyses can be performed in the following ways: (Turban & Aronson, 2001 p.313).

- Using built-in functions

  Several EIS products include built in analytic functions similar to those available in DSS generators

- Integration with DSS products

  several EIS products have easy interfaces to DSS tools
- Analysis by intelligent agent

  simple comparisons, trends, or ratios can be calculated automatically,

  and an alert.

2.2.7 **Hardware Issues**

Client /server architectures divide processing system between networked clients and servers, with processing delegated to the machine most suited to perform it, the users typically interacts directly only with the clients portion of the application which run directly only with the client portion of the application, which runs on the user desktop PC. Client processing includes the user interface, data input, database query, report generation, graphics processing for information display, local data storage, screen caching and other personal productivity application (Watson, Houdeshel, Rainer, JR, 1997 p.144).
The server part of the applications runs on the number of application specific servers, such as file servers, data servers, application servers, and others. Server processing includes managing peripheral devices (e.g., printers), controlling access to databases, processing business application such as finance and marketing and managing the network. Data and file servers include mainframes and data warehouse (Watson, Houdeshel & Rainer, JR, 1997 p.144)
2.2.8 The Client

Executive PC’s are the client portion of today’ EIS client. State of the art PCs have the memory and power to perform necessary processing on the desktop, thus relieving the load on the server and host providing rapid response times.

EIS software is designed to run on the state of the art hardware, both client and servers. It is important to realize that executive’s PC may need to be upgraded to handle new release of EIS software. For example PC should have enough RAM so that EIS does not have to be exchanged between the hard drive and memory, thus decreasing response time (Watson, Houdeshel & Rainer, JR, 1997 p.144 & 145).
2.2.9 The Server

In today’s clients/server architectures, the mainframe functions as another server on the network, offering reliable and available processing power, data storage, and security. Organizations can processes mainframe data and store them on other servers. Some transactions and legacy system that are not as frequently accessed also can be stored this way.

In addition to the mainframe, client/server architectures contain many other types of applications-specific servers, such as data warehouses, file servers and SQL databases.

Data warehouses separate real time data used by production online transaction processing application from the historical data used by office worker to analyze business trends and produce reports. Production data can be transferred to a data warehouse at intervals and restructured into a format specifically designed for ad hoc query, analysis and reporting (Watson, Houdeshel & Rainer, JR, 1997 p.146).
2.2.10 Software Issues

In the early days of EIS, some system failed because the software used was inadequate for building and maintaining a system or providing a system that was easy to use. Today it is less likely that an EIS will fail because of a poor software choice.

A good EIS can be built by using several alternatives. Almost all are general purpose software. Whether it’s a spreadsheet, databases or report generators, provide a graphical, EIS like front-end (Watson, Houdeshel & Rainer, JR, 1997 p.147).

Wide variety of software that can be used in building an EIS

![Diagram of EIS software components]

*figure 2.3 Wide Variety of Software that can be used in building EIS, Watson, Houdeshel & Rainer, JR, R 1997, p.148*
2.2.11 Factors That Influence the Making Of EIS Software

(Watson, Houdeshel & Rainer, JR, 1997 p.150).

- The number and location of the users.

The size and location of the current and future user affect the EIS software making decision. Some EIS software supports a small number of users in a single location, but cannot accommodate large numbers of geographically dispersed users. The real key is the strength of the system administration tools that monitor system usage, provide security, maintain a list of authorized users, and send and cache screens as needed.

- The level of executive commitment

the level of the commitment to the EIS project can be varying considerably. If the commitment and the budget is low, we can build a less expensive EIS software, however if the software is successful, the software decision can be reevaluated.

- The level of information sophistication of the user

Burkan (1991) describes six functional needs of executives:

1. electronic retrieval or reports- access existing reports
2. customized reporting- modify existing reports uniquely for each executive
3. Exploration- creates reports and graphs that have not been previously created.
4. Variance analysis- contrast relationship among existing pieces of information and create new data (also referred as trend analysis).

5. Computer modeling- manipulate the data and the relationships (rules) upon which the data are based.

The six needs are related to increasing levels of insight, the first three allow executives to apply business knowledge to existing data and the last three creates insight by generating new data (Watson, Houdeshel & Rainer, JR, 1997 p.151).

- Reporting requirements

the quality of existing management reporting systems also effects EIS software creation. If current reporting systems are high quality, then they can be used as an effective initial template for EIS reports. EIS is expected to improve on existing reporting system both in terms of appearance and functionality. The EIS reporting function can display graphs, tables and text on single screens, switch between tabular and graphics output, and attach explanatory notes.

EIS software offers multiple graphs on a single screen for simultaneous analysis and comparison, high speed presentation of graphs, color coding to highlight areas of concern, individual color schemes, a variety of graphs such as pie, bar and line, and automatic generation of scales on graphs.
• The EIS budget

the size of the budget depends on several factors, the financial resources
of the organization, the level of support for the system, how much money
was requested, and what computer resources (e.g. hardware,
communication networks, software) already exist.

• Current and future system capabilities

the software created must meet the needs of the initial version, but
thought also should be given to how well it will serve the needs of and
expanded EIS. Under powered software can cause problems later and
may require expensive workarounds to other software.

• Existing computing environment

the software that is selected for building the EIS must be compatible with
the existing computing infrastructure and the current approach to
application development.

• The ability to access data

most organizations have data scattered over a variety computer and
databases

comprehensive EIS software have programs that extract data from the
common database management systems and feed the data to the EIS.

• In house technical skills

EIS software provides the features and capabilities that most EIS require,
reducing the need for in house technical skill
- System security

  security can be provided in various ways. Password and special cards can be used to control access to the system and specific applications. In addition, control can be exercised at the PC level by allowing authorized information only from designated PCs. Encryption may be used with geographically dispersed user, including those who access the system from home.

2.3 SYSTEM DEVELOPMENT LIFE CYCLE (SDLC)

  Provides overall framework for managing system development process.

2.3.1 Two Main Approaches to SDLC

  - Traditional approach: structured systems development and information engineering
  - Object-oriented approach: object technologies requires different approach to analysis, design, and programming

  For problem solving work to be productive, it needs to be productive, it needs to be organized and goal oriented.
2.3.2 Phases of the SDLC

**Project planning:**
initiate, ensure feasibility, plan schedule, and obtain approval for project

**Analysis:**
understand business needs and processing requirements

**Design:**
define solution system based on requirements and analysis decisions

**Implementation:**
construction, testing, user training, and installation of new system

**Support:**
keep system running and improve

![figure 2.4 SDLC Phases](image)
2.3.3 SDLC and Problem Solving

Similar to problem-solving approach

- Organization recognizes problem (Project Planning)
- Project team investigates, understands problem and solution requirements (Analysis)
- Solution is specified in detail (Design)
- System that solves problem built and installed (Implementation)
- System used, maintained, and enhanced to continue to provide intended benefits (Support)

2.3.4 Planning Phase of SDLC

- Define business problem and scope
- Produce detailed project schedule
- Confirm project feasibility
- Staff the project
- Launch project
2.3.5 Analysis Phase of SDLC

- Define system requirements
- Build prototypes for discovery of requirements
- Prioritize requirements
- Generate and evaluate alternatives
- Review recommendations with management
- Gather information to learn problem domain

2.3.6 Design Phase of SDLC

- Design the system interfaces
- Design and integrate the database
- Prototype for design details
- Design and integrate system controls
- Design the application architecture
- Design and integrate the network
- Design the user interface

2.3.7 Implementation Phase Of SDLC

- Construct software components
- Verify and test
- Convert data
- Train users and document the system
- Install the system
2.3.8 Support Phase of SDLC

- Maintain system
  - Small patches, repairs, and updates
- Enhance system
  - Small upgrades or enhancements to expand system capabilities
  - Larger enhancement may require separate development project
- Support user
  - Help desk and/or support team

2.4 TRADITIONAL APPROACH

2.4.1 Traditional and Object-Oriented views of Activities

![Traditional Approach VS Object Oriented approach](image)

Figure 2.5 Traditional approach VS Object Oriented approach
2.4.2 Requirement Models for the Traditional and OO Approaches

![Diagram: Requirement models for the traditional and OO approaches]

**Figure 2.6** Requirement models for the traditional and OO approaches
2.4.3 Data Flows Diagram

- Graphical system model that shows all main requirements for an IS in one diagram
  - Inputs / outputs
  - Processes
  - Data storage

- Easy to read and understand with minimal training
figure 2.7 DFD components

Process

Data flow

External agent

Data store

Real-time link

Step-by-step instructions are followed that transform inputs into outputs (a computer or person or both doing the work).

Data flowing from place to place, such as an input or output to a process.

The source or destination of data outside the system.

Data at rest, being stored for later use. Usually corresponds to a data entity on an entity-relationship diagram.

Communication back and forth between an external agent and a process as the process is executing (e.g., credit card verification).
2.4.4 Description About DFD

- Data flow diagrams (DFDs) are decomposed into additional diagrams to provide multiple levels of detail
- Higher level diagrams provide general views of system
- Lower level diagrams provide detailed views of system
- Differing views are called levels of abstraction
2.4.5 Example of DFD

![Context Diagram](image_url)

Diagram 0

Diagram 1

Figure 2.8 Example of DFD
2.4.6 Context Diagram

- Highest level (most abstract) view of system
- Shows system boundaries
- System scope is represented by a single process, external agents, and all data flows into and out of the system.
- DFD that summarizes all processing activity

2.5 MEDIA TERMINOLOGIES

Below are terminologies and parameter that will be used in the making of media review.

- **Mean** - the sum of a group of quantities divided by the number of quantities in the group.
  - Advantage: consistent with the total set of numbers
  - Disadvantage: if extreme outliers exist, the mean may not represent trends accurately.

- **Median** - the number that occupies the middle position when numbers are arranged in their natural order of progression.

- **Mode** - the number that occurs most frequently in a set of numbers. If no number occurs more than once, no mode exists
Example of mean, mode and median.

- **Index numbers** are considered a good indicator of the potential of a market or audience or segment.

- Indices express a number or a group of numbers in relation to the base number. The base is typically an average but can also be a target. The base is always 100.

- To whom shall we advertise?
Index = \% of users in a demographic segment

\% of population in the same segment

<table>
<thead>
<tr>
<th>Age Segment</th>
<th>Population in Segment (%)</th>
<th>Product Use in Segment (%)</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>15.1</td>
<td>18.0</td>
<td>119</td>
</tr>
<tr>
<td>25-34</td>
<td>25.1</td>
<td>25.0</td>
<td>100</td>
</tr>
<tr>
<td>35-44</td>
<td>20.6</td>
<td>21.0</td>
<td>102</td>
</tr>
<tr>
<td>45+</td>
<td>39.3</td>
<td>36.0</td>
<td>91</td>
</tr>
</tbody>
</table>

- Example

Index Analysis for TV Program

<table>
<thead>
<tr>
<th>Program Name (NEWS)</th>
<th>All People TVR</th>
<th>AB 20+ TVR</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Headline News (METRO TV)</td>
<td>3.9</td>
<td>6.7</td>
<td>192</td>
</tr>
<tr>
<td>2. Breaking News (METRO TV)</td>
<td>2.9</td>
<td>5.0</td>
<td>175</td>
</tr>
<tr>
<td>3. Liputan 6 Petang (SCTV)</td>
<td>7.5</td>
<td>7.2</td>
<td>96</td>
</tr>
<tr>
<td>4. Seputar Indonesia (RCTI)</td>
<td>7.8</td>
<td>8.8</td>
<td>157</td>
</tr>
<tr>
<td>5. Info Utama (IVM)</td>
<td>5.9</td>
<td>7.0</td>
<td>119</td>
</tr>
<tr>
<td>6. Lintas Lima (TPI)</td>
<td>3.0</td>
<td>3.2</td>
<td>106</td>
</tr>
<tr>
<td>7. Cakrawala (ANTEVE)</td>
<td>2.3</td>
<td>2.8</td>
<td>124</td>
</tr>
</tbody>
</table>
Rating is the audience of a particular program or station at a specific period (min 1 minute) of time expressed as a percent of the audience population. For example

Rating % = HH tuned into the TV shows / total population TV households

Ratings can be added as long as they have the same base (i.e. the same geographic area).

Ratings are duplicated reach estimates.

TV usually uses the audience population as TV Households.
• Example of rating calculation:

Women with ages of 20-59 years who watch AFI 3,000,000

Total population of women with ages of 20-59 6,000,000

Count Rating (%)

Rating = 3 million / 6 million x 100% = 50%

**ALL PEOPLE**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Channel</th>
<th>Cost</th>
<th>TVR</th>
<th>Share</th>
<th>CPRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>INTAN</td>
<td>RCTI</td>
<td>16,000</td>
<td>10.5</td>
<td>39.6</td>
<td>1,610</td>
</tr>
<tr>
<td>2</td>
<td>PENGANTIN REMAJA</td>
<td>RCTI</td>
<td>20,000</td>
<td>10.1</td>
<td>30.1</td>
<td>1,982</td>
</tr>
<tr>
<td>3</td>
<td>MISTERI ILAHI</td>
<td>RCTI</td>
<td>20,000</td>
<td>6.0</td>
<td>20.6</td>
<td>3,052</td>
</tr>
<tr>
<td>4</td>
<td>MISTERI DUA DUNIA</td>
<td>RCTI</td>
<td>20,000</td>
<td>6.2</td>
<td>19.9</td>
<td>3,219</td>
</tr>
<tr>
<td>5</td>
<td>MR BEAN</td>
<td>TRANS</td>
<td>16,000</td>
<td>5.5</td>
<td>15.2</td>
<td>2,736</td>
</tr>
<tr>
<td>6</td>
<td>BAJAJ BAJURI</td>
<td>TRANS</td>
<td>17,000</td>
<td>4.4</td>
<td>15.7</td>
<td>3,035</td>
</tr>
<tr>
<td>7</td>
<td>OS (OFFICE BOY)(R)</td>
<td>RCTI</td>
<td>12,000</td>
<td>4.0</td>
<td>21.8</td>
<td>3,034</td>
</tr>
<tr>
<td>8</td>
<td>JAKA TINGKIR 2</td>
<td>RCTI</td>
<td>18,000</td>
<td>2.9</td>
<td>15.2</td>
<td>6,395</td>
</tr>
<tr>
<td>9</td>
<td>KERA SAKTI</td>
<td>TV7</td>
<td>8,000</td>
<td>1.5</td>
<td>9.6</td>
<td>5,244</td>
</tr>
<tr>
<td>10</td>
<td>INGIN CEPAT KAYA(R)</td>
<td>TPI</td>
<td>10,000</td>
<td>1.5</td>
<td>10.9</td>
<td>6,580</td>
</tr>
</tbody>
</table>

**figure 2.10 Example of TVR**

• **GRP** is the aggregate total of the ratings for a given base.

Gross Rating Points in Broadcast Media by week/month

2 commercials with 15 rating = 30 GRPs

5 commercials with 10 rating = 50 GRPs

Total 80 GRPs
### Program Spot TVR GRP

<table>
<thead>
<tr>
<th>Program</th>
<th>Spot</th>
<th>TVR</th>
<th>GRP (spot x rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFI</td>
<td>4</td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td>Indonesian Idol</td>
<td>5</td>
<td>19</td>
<td>95</td>
</tr>
<tr>
<td>Pop star</td>
<td>6</td>
<td>8</td>
<td>48</td>
</tr>
<tr>
<td>Bakal beken</td>
<td>7</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Total spot</td>
<td>22</td>
<td></td>
<td>235</td>
</tr>
</tbody>
</table>

**Table 2.1 GRP Calculation**

- **The way to define GRP level**

  We can define GRP by paying attention at several parameters, namely:
1. BY directly see the amount of GRPs that campaigned by our direct competitor, for example:

<table>
<thead>
<tr>
<th></th>
<th>GRP per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>max</td>
<td>average</td>
</tr>
<tr>
<td>bendera 123</td>
<td>1730</td>
</tr>
<tr>
<td>bendera 456</td>
<td>1230</td>
</tr>
<tr>
<td>dancow balita 1+</td>
<td>251</td>
</tr>
<tr>
<td>dancow balita madu</td>
<td>2345</td>
</tr>
</tbody>
</table>

Table 2.2 GRP level

2. We can see or determine from our needs of reach in the advertising campaign as well, and from the coverage area of the audience 70%, 80%, etc. After determining the needs, then we determine the GRP value that has the possibilities to reach the targeted reach and coverage area above.

3. From the expected share of voice value ahead of the total category.

   total universe of milk powder category = 10,000

   the targeted SOV is 20%

   GRP that we commence = 2000 -> SOV x total GRP
• **Share** = the audience of a particular TV program or time period expressed as a percent of the population *watching TV at that particular time*. So it is segmented into the viewing audience

Share = household tuned into the show / household using TV.

• **HUT** - Homes using TV at a particular time is expressed as a percent of all TV homes. Always show as a percentage

HUT x Share = Rating

![TV Population Diagram](image)

**figure 2.11 TV Population**
TV Ratings
TV A 20
TV B 10
TV C 10

Channel Share
TV A 50%
TV B 25%
TV C 25%

Rating → TV A = (2000/10,000) x 100% → 20
Share → TV A = (2000/4,000) x 100% → 50%

- **Reach** = the % of different homes or persons exposed at least once to an advertising schedule over a specific period of time (the campaign, the week, the month, etc.).

Illustration: Imagine you only run one ad on one TV program as part of your advertising campaign. Reach is the number of people who view that ad as a percentage of all the people who potentially could have seen that ad (i.e. everyone who owns a TV).

Also known as “net reach”, “unduplicated reach”, “1+ reach”, “unique reach”, “coverage”, “unique coverage”

+ Reach = the number of viewers who received at least one contact.

2+ Reach = the number of viewers who received at least two contacts
Effective reach denotes the percent of the target audience which is exposed to a message the “effective” number of times.

For example, if a minimum of 3 exposures is judged effective, then maximizing 3+ reach might be a goal.

- Competitive reach and frequency example

At effective frequency 5+, reaching around 80%
Factors which help build high reach in a TV plan:

- High-rated programmes
- “One-off” programmes (major sports events, major movies)
- A wide selection of program genres
- A wide selection of broadcast times (dayparts) and days of the week
- Use of many stations

Factors which often lead to lower reach in a TV plan:

- Lower-rated programmes
- Programmes likely to deliver the same audience nearly every day (soap operas, daytime talk shows)
- Fewer stations

- **CPRP (Cost Per Rating Point)** = cost that paid to buy one rating point.
  - The method of relating broad case audiences to cost.
  - A common denominator for media comparisons.
  - Calculated by dividing the cost of commercial time by the program rating.

\[
\text{CPRP} = \frac{\text{cost of commercial time}}{\text{GRP}}
\]

For example: the cost of commercial time is 100 million

\[
\text{GRP} = 50
\]

\[
\text{CPRP} = \frac{100 \text{ million}}{50} = 2 \text{ millions}
\]

So that in this target audience condition, to gain 1 rating point, we need 2 millions.
The importance of CPRP efficiency

<table>
<thead>
<tr>
<th>no.</th>
<th>program name</th>
<th>channel</th>
<th>cost (millions)</th>
<th>TVR</th>
<th>CPRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Di sini ada setan</td>
<td>SCTV</td>
<td>18000</td>
<td>13</td>
<td>1392</td>
</tr>
<tr>
<td>2</td>
<td>Konser inaugurasi AFI</td>
<td>IVM</td>
<td>18000</td>
<td>13</td>
<td>1440</td>
</tr>
<tr>
<td>3</td>
<td>Gengsi gede-gedean</td>
<td>IVM</td>
<td>18000</td>
<td>13</td>
<td>1441</td>
</tr>
<tr>
<td>4</td>
<td>Diari AFI</td>
<td>IVM</td>
<td>12000</td>
<td>10</td>
<td>1200</td>
</tr>
<tr>
<td>5</td>
<td>Misteri gunung merapi</td>
<td>IVM</td>
<td>20000</td>
<td>11</td>
<td>1761</td>
</tr>
</tbody>
</table>

Table 2.3 CPRP calculation

Budget 100 millions;
- Di sini ada setan with CPRP = 1,392 → GRPs = 72
- Misteri Gunung Merapi with CPRP = 1,761 → GRPs = 57

The inefficiency become 21%.

- **Duplicated reach**
  
  illustration: imagine that you only run the ad on two different TV programs. Some people will not see the ad at all. Some will see the ad only once on Program A and others will only see the ad once on Program B. Finally, there will be a group that sees the ad twice: once on Program A and once on Program B. This group is the duplicated reach.
- **SOV (share of voice)**
  - How much communication effort behind one brand relative to another
  - % of total advertising GRPs in category

- **SOE (share of expense)**
  - How much spending behind one brand relative to another
  - % of total advertising spending by category
  - All TVC (5 second, 15 second, 30 second, etc) cost converted to 30 sec cost

- **Example**

**Misteri Ilahi**

Rate Card - 30 sec | 20.000.000 | Rating | 10

<table>
<thead>
<tr>
<th>TVC</th>
<th>Cost</th>
<th>SOS</th>
<th>GRPs</th>
<th>SOV</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biskuit A - TVC 30</td>
<td>20.000.000</td>
<td>21%</td>
<td>10</td>
<td>25% SOS &lt; SOV Efficient</td>
<td></td>
</tr>
<tr>
<td>Biskuit B - TVC 45</td>
<td>30.000.000</td>
<td>31%</td>
<td>10</td>
<td>25% SOS &gt; SOV Inefficient</td>
<td></td>
</tr>
<tr>
<td>Biskuit C - TVC 60</td>
<td>40.000.000</td>
<td>42%</td>
<td>10</td>
<td>25% SOS &gt; SOV Inefficient</td>
<td></td>
</tr>
<tr>
<td>Biskuit D - TVC 5</td>
<td>6.000.000</td>
<td>6%</td>
<td>10</td>
<td>25% SOS &lt; SOV Efficient</td>
<td></td>
</tr>
</tbody>
</table>

Cost Converted 30 sec

<table>
<thead>
<tr>
<th>TVC</th>
<th>Cost to 30 sec</th>
<th>SOS</th>
<th>GRPs</th>
<th>SOV</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biskuit A - TVC 30</td>
<td>20.000.000</td>
<td>25%</td>
<td>10</td>
<td>25% SOS = SOV</td>
<td></td>
</tr>
<tr>
<td>Biskuit B - TVC 45</td>
<td>20.000.000</td>
<td>25%</td>
<td>10</td>
<td>25% SOS = SOV</td>
<td></td>
</tr>
<tr>
<td>Biskuit C - TVC 60</td>
<td>20.000.000</td>
<td>25%</td>
<td>10</td>
<td>25% SOS = SOV</td>
<td></td>
</tr>
<tr>
<td>Biskuit D - TVC 5</td>
<td>20.000.000</td>
<td>25%</td>
<td>10</td>
<td>25% SOS = SOV</td>
<td></td>
</tr>
</tbody>
</table>

96.000.000 | 40

80.000.000 | 40
• **Campaign / Scheduling Patterns**

1. **Continuity**

   ![Continuity Pattern](image)

   figure 2.14 Campaign with continuity pattern

2. **“Flights” or “Bursts”**

   ![Burst Pattern](image)

   figure 2.15 Campaign with burst pattern

3. **Pulses**

   ![Pulse Pattern](image)

   figure 2.16 Campaign with pulses pattern
• Continuity is often useful for supporting products with a short purchase cycle and/or heavy ongoing competition “Reminder messages”
  – Examples: Laundry detergent, Candy, shampoo

• Flights or Bursts are often useful for supporting seasonal products, in-store promotions
  – Examples: soft drinks, perfume, Biscuit

• Pulsing is often useful and cost effective in supporting products that are purchased year round and require awareness maintenance
  – Examples: Breakfast cereals, toilet paper

2.6 PROJECT HUMAN RESOURCE MANAGEMENT

Project human resource management includes the processes required to make the most effective use of the people involved with a project. Human resource management includes all project stakeholders: sponsors, customer, project team members, support staff, suppliers supporting the project, and so on.

Human resource management includes the following four processes:

1. human resource planning

   Human resource planning involves identifying and documenting project roles, responsibilities, and reporting relationships. Key outputs of this process include roles and responsibilities, and reporting relationships, an organizational chart for the project and a staffing management plan.
2. Acquiring the project team

acquiring the project team involves getting the needed personnel assigned to and working on the project. Key outputs of this process are project staff assignments, resource availability information, and updates to the staffing management plan.

3. Developing the project team

developing the team project team involves building individual and group skills to enhance project performance. Team building skills are often a challenge for many project managers. The main output of this process is assessing team performance.

4. Managing the project team

managing the project team involves tracking team member performance, motivating team members, providing timely feedback, resolving issues and conflicts, and coordinating changes to help enhance project performance.

Outputs of this process include requested changes, recommended corrective and preventive actions, updates to organizational process assets, and updates to the project management plan.
2.7 PROJECT SCOPE MANAGEMENT

Project scope management includes the processes involved in defining and controlling what is or is not included in a project. It ensures that the project team and stakeholders have the same understanding of what products the project will produce and what processes the project team will use to produce them. There are five main processes involved in project scope management:

1. **Scope planning** involves deciding how the scope will be defined, verified, and controlled and how the WBS will be created. The project team creates a scope management plan as the main output of the project scope planning process.

2. **Scope definition** involves reviewing the project charter and preliminary scope statement created during the initiation process and adding more information during the planning process as requirements are developed and change request are approved. The main outputs of scope definition are the project scope statement and project scope management plan.

3. **Creating the WBS** involves subdividing the major project deliverables into smaller, more manageable components. The main outputs include a work breakdown structure (WBS), a WBS dictionary, a scope baseline, requested changes to the project, and updates to the project scope statement and project scope management plan.
4. **Scope verification** involves formalizing acceptance of the project scope. Key project stakeholders, such as the customer and sponsor for the project, inspect and then formally accept the deliverables of the project during this process. If the deliverables are not acceptable, the customer or sponsor usually request changes, which result in recommendations for taking corrective actions, the main outputs of this process, therefore, are accepted deliverables, requested changes, and recommended corrective actions.

5. **Scope control** involves controlling changes to project scope, which is a challenge on many information technology projects. Scope control includes identifying, evaluating and implementing changes to project scope as the project progresses. Scope changes often influence the team’s ability to meet project time and cost goals. So project managers must carefully weigh the cost and benefits of scope changes. The main outputs of this process are requested changes, recommended corrective actions, and updates to the project scope statement, WBS and WBS dictionary, scope baseline, project management plan, and organizational process assets.

### 2.8 PROJECT TIME MANAGEMENT

Project time management involves the process required to ensure timely completion of a project. Achieving timely completion of a project, however, is by no mean simple. There are six main processes involved in project time management:
1. **Activity definition** involves identifying the specific activities that the project team members and stakeholders must perform to produce the project deliverables. An activity or task is an element of work normally found on the work breakdown structure (WBS) that has an expected duration, a cost, and resource requirements. The main outputs of this process are an activity list, activity attributes, milestone list and requested changes.

2. **Activity sequencing** involves identifying and documenting the relationships between project activities. The main outputs of this process include a project schedule network diagram, requested changes, and updates to the activity list and attributes.

3. **Active resource estimating** involves estimating how many resources (people, requirement, and material), a project team should use to perform project activities. The main outputs of this process are activity resource requirements, a resource breakdown structure, requested changes, and updates to activity attributes and resource calendars.

4. **Activity duration estimating** involves estimating the number of work periods that are needed to complete individual activities. Outputs include activity duration estimates and updates to activity attributes.

5. **Schedule development** involves analyzing activity sequences, activity resource estimates, and activity duration estimates to create the project schedule. Outputs include a project schedule, schedule model data, a schedule baseline, requested changes, and updates to resource requirements, activity attributes, the project calendar, and the project management plan.
6. **Schedule control** involves controlling and managing changes to the project schedule. Outputs include performance measurements, requested changes, recommended corrective actions, and updates to the schedule model data, the schedule baseline, organizational process assets, the activity list and attributes, and the project management plan.

2.9 **PROJECT COST MANAGEMENT**

Project cost management includes the processes required to ensure that a project team completes a project within an approved budget. There are three project cost management processes:

1. **Cost estimating** involves developing an approximation or estimate of the cost of the resources needed to complete a project. The main outputs of the cost estimating process are activity cost estimates and supporting detail, requested changes, and updates to the cost management plan.

2. **Cost budgeting** involves allocating the overall cost estimate to individual work items to establish a baseline for measuring performance. The main outputs of the cost budgeting process are cost baseline, project funding requirements, requested changes and updates to the cost management plan.

3. **Cost control** involves controlling changes to the project budget. The main outputs of the cost control process are performance measurements, forecasted completion information, requested changes, recommended corrective action, and updates to the project management plan (includes the cost management plan), cost estimate, cost baseline, and organizational process asset.
2.10 PROJECT RISK MANAGEMENT

There are six major processes involved in risk management:

1. **Risk management planning** involves deciding how to approach and plan the risk management activities for the project. By reviewing the project scope statement, project management plan, enterprise environmental factors, and organizational process assets, project teams can discuss and analyze risk management activities for their particular projects. The main output of this process is risk management plan.

2. **Risk identification** involves determining which risks are likely to affect a project and documenting the characteristics of each. The main output of this process is the start of a risk register.

3. **Qualitative risk analysis** involves prioritizing risk based on their probability and impact occurrence. After identifying risk, project teams can use various tools and techniques to rank risk and update information in the risk register. The main output is updates to the risk register.

4. **Quantitative risk analysis** involves numerically estimating the effects of risk on project objectives. The main output of this process is also updates to the risk registers.
5. **Risk response planning** involves taking steps to enhance opportunities and reduce threats to meeting project objectives. Using outputs from the preceding risk management process that often result in updates to the risk register and project management plan as well as risk related contractual agreement.

6. **Risk monitoring and control** involves monitoring identified and residual risk, identifying new risks, carrying out risk response plans, and evaluating the effectiveness of risk strategies throughout the life of the project. The main outputs of this process include recommended corrective and preventive actions, requested changes and updates to the risk register, project management plan, and organizational process assets.
CHAPTER 3

PROBLEM ANALYSIS

3.1 COMPANY HISTORY

PT. Mayora Indah TBK since first established in 1977 has been one of Indonesia’s important food industries. PT. Mayora boasts a gradual rapid growth towards the year, as the result from country’s growth in economy and the shift of social consumptive pattern towards more practical products.

Nowadays, Mayora has been divided into 8 business divisions:

1. Biscuit
   - Roma
     - Better
     - Marie Susu
     - Kelapa
     - Malkist
     - Slai O Lai
   - Danisa
   - Prima
2. Coffee
   - Torabika
     • Ground coffee
     • Instant coffee

3. Wafer
   • Beng-beng
   • Astor
   • Sando
   • Roma Superman

4. Noodles
   • MIGELAS
   • MIDUO

5. Candy
   • Kopiko
   • Plonk
   • Kis
   • Tamarin

6. Chocolate
   • Choki-choki
   • Danisa Haagelslags
7. Health Food
   - Energen Cereal
   - Energen Milkuit

8. Beverage
   - Vitazone

To meet the increasing market demand, at 1990 PT. Mayora Indah TBK went public through the IPO (INITIAL PUBLIC OFFERING). A successful move, results in the materialization of the factories in Tangerang, Bekasi and Surabaya. The factories employ approximately 5,300 workers.

Product of Mayora has been distributed widely in Indonesia and also overseas, such as Malaysia, Thailand, Philippines, Vietnam, Singapore, Hong Kong, Saudi Arabia, Australia, and Africa. The distribution itself has been supported with strong and wide connection network.

Vision and mission of the company:

- To continuously improve our competitive position in the category
- To build strong brands and distribution channels in all fronts
- To provide a challenging, fun and financially rewarding working environment where fair competition and a responsible attitude are encouraged
- To be socially and environmentally responsible
- To bring values to our stakeholders by securing growth and strong financial structure in the industry
3.2 COMPANY ORGANIZATIONAL STRUCTURE

Biscuit division is one of the major SBU (System Business Unit) in PT. Mayora Indah TBK. The division is led by General Manager as the senior manager, under the supervision of Managing director as the leader of all SBU in Mayora.

Hierarchy chart of Mayora Biscuit division:

Figure 3.1 Organization chart of Mayora’s biscuit division
3.3 POLICY AND PROCEDURE

In making the media plan, there are some policy and procedures that has to be followed by all SBU. The policies would be:

General:

1. The person or party who apply for the Action Proposal/ Purchase Order could not be the person or party who approved the Action Proposal/ Purchase Order of the Promotion item.

Apply:

1. Every Action Proposal / Purchase Order of the promoted item has the different level of appliance.
2. The level would be automatically being taken by the superior if the authorized person that should apply for that level is unavailable.

Approval:

1. Every Action Proposal has the different level for the approval.
2. The level would be automatically taken by the upper hierarchy if the authorized person for that level is unavailable.
3. Before any approval from Board of Director, the highest hierarchy from Marketing (apparently the General Manager of SBU) has to approve at the first place, and considered as the acknowledge party.
4. Every value of the promotion Purchase Order has to be approved by the Director in charge.
5. If the director in charge is unavailable, then approval of the Purchase Order has to wait for the Director in Charge or could be consulted with the BOD in the making of the next Authorization Matrix.

### 3.4 AUTHORIZATION MATRIX of ACTION PROPOSAL

**ATL (ABOVE THE LINE)**

<table>
<thead>
<tr>
<th>Action Proposal Value</th>
<th>Appliance (Position)</th>
<th>Approval (Position)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Rp 500.000.000,-</td>
<td>PM or MM</td>
<td>MD and BOD</td>
</tr>
<tr>
<td>Rp 250.000.000,-</td>
<td>PM or MM</td>
<td>GM SBU and MD</td>
</tr>
<tr>
<td>Rp 500.000.000,-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rp 25.000.000,-</td>
<td>PM or MM</td>
<td>GM SBU</td>
</tr>
<tr>
<td>Rp 25.000.000,-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; Rp 25.000.000,-</td>
<td>PM</td>
<td>MM or GM SBU</td>
</tr>
</tbody>
</table>

Table 3.1 Authorization Matrix of Action Proposal

Description:

PM: Product Manager

MM: Marketing Manager

GM: General Manager

MD: Managing Director

BOD: Board of Director
If the stated position is vacant, the appliance and the approval will be step to upper hierarchy.

3.5 PROCEDURES:

Product Manager made the Action Proposal based on the media plan; the Action Proposal should be consistent with the media plan. After the Action Proposal has been made, then the Product Manager would ask the approval from the position stated (MM, GM, MD, BOD); depend on the value of the action proposal. After the action proposal has been approved, then it will be sent to the commercial promotion, in order to be audited. The commercial promotion will also check whether the media plan is being executed properly by the agency or not later. The supervision will be done by taping the television program and check whether the advertisement is being aired as written in the media plan or not.

The commercial plan will then send the Action Proposal to the Purchasing, in order to get the Purchase order. After the Purchase Order issued, then it will be sent to the agency.
3.6 DATA FLOW DIAGRAM

The Data Flow Diagram bellow will show the current system of Mayora Biscuit Division. The DFD will be consisting of Context diagram, DFD level 0, and DFD level 1. The DFD will describe the process on how Mayora Biscuit Division is still using the Agency based system, which means that the result of the Media Plan analysis (Media Review) is still being done by the Agency, in addition the connection with sales number, is still done manually by the Managers. The DFD will be describing two kinds of activity, media buying and media review.
Figure 3.2 Context diagram of Mayora's biscuit division current system
3.7 Context Diagram

Media Review

Description:

1. Product Manager Use *briefing* and previous *media review analysis* as the guidelines for agency, to create the media plan through the *Account Executive*.

2. Account Executive will pass the *briefing result* to the *Agency Based System*.

3. *Agency based system* will give the *media plan draft* as the result of the guidelines.

4. The *media plan draft* then will pass by the *account executive* to the *product manager*.

5. Product manager then will ask the verification from Marketing Manager through the process of verify media plan.

6. *Product manager* then will ask the verification from *Marketing Manager* through the process of *verify media plan*.

7. *Marketing manager* then will ask the verification from *General Manager* through the process of *verify media plan*.

8. *General Manager* then will ask the verification from *Board of Director* (Owner) and *Managing Director* through the process of *verify media plan*. 
9. *Product manager* then will ask the verification from *Marketing Manager* through the process of **verify media plan**.

10. After reach the highest hierarchy (*BOD and MD*) the media plan will be verified and sent back to the *product manager* by means of the same process with asking the verification, the data’s name will be **verified media plan**.

11. *Product Manager* will then give the **verified media plan** to the *account executive* and pass the order to **execute the media plan** to the *agency based system*.

12. After the media plan has been executed, *agency based system*, give the **media review** to *account executive*.

13. *Account executive* then will give the **media review presentation** to the *Product Manager, Marketing Manager* and *General Manager*.

14. *Product Manager, Marketing Manager* and also *General Manager* will analyze whether their strategy have the impact on *sales number* or not by checking the sales report which sent by the *sales administrator*.

**Media Buying**

1. *Product Manager* made an **Action Proposal** and asks the approval from the *Marketing Manager, General Manager, and BOD and MD* through the process of **action proposal approval**.

2. *BOD and MD* then will return the approved action proposal directly to the *Product Manager*. 
3. *Product Manager* then sent the *approved action proposal* and *verified media plan* to *Commercial Promotion* in order to be verified through the process of *verify AP with media plan*.

4. *Commercial Promotion* then sent the *verified AP and media plan* back to the *Product Manager*.

5. By having the *verified AP and media plan*, *Product Manager* could request the purchase order to *Purchasing Director*.

6. The *purchase order* then sent directly to the *Account Executive* as the acknowledgement that we agree to pay for the media plan.
Figure 3. 3 DFD Level 0 of Mayora’s biscuit division current system
3.7.1 DFD Level 0

MEDIA REVIEW

Description:

1. *Product Manager* sent the data of *previous media review analysis* to the process of *create media plan briefing*. The result of the briefing then will be stored in *contact report database*.

2. *Product Manager* also gives briefing to *Account Executive*, which produce *briefing result*.

3. *Briefing result* and *contact report* will be used in *create media plan process*. The result of the process will be stored in *draft database*.

4. *Media plan draft* then will be sent to through the *verify media process* to the *Marketing Manager, General Manager, and BOD and MD*, the result (*verified media plan*) will be sent to *Commercial Promotion*.

5. In line with the media plan *Product Manager* also *create action proposal* and then ask for the approval from *Marketing Manager, General Manager* and *BOD and MD* through the process of *approve action proposal*.

6. The result of the *approve action proposal* process is *approved action proposal* and will be sent directly to the *Product Manager*.

7. *Product Manager* sent the approved action proposal to *commercial promotion* in order to be verified.
8. *Commercial Promotion* will then verify the *approved action proposal* with the *verified media plan* through the process of *verify action proposal with media plan* and the result will be saved in the *verified action proposal with media plan* database.

9. After the *Commercial Promotion* verify action proposal with media plan, *Product Manager* will request *purchase order* to *purchasing director*, and the result will be sent directly to *Account Executive* as the representative of the agency.

10. Soon after receiving the purchase order, *Account Executive* will notify *Agency* to execute the media plan through the process of *execute media plan*. The result will be stored in the *executed media plan* database and will be used in making the media review through the *create media review* process. The result will be saved in *media review presentation* database.

12. *Media review presentation* will be sent to *Product Manager, Marketing Manager* and *General Manager*, and then will be analyzed through the process of *analyze media review presentation*. 


Figure 3.4 DFD Level 1 Create media plan
3.7.2 DFD Level 1

CREATE MEDIA PLAN

DESCRIPTION

1. *Product Manager* sent the *previous media review analysis* in order to be used in *set media guidelines* process, which the result will be stored in *media plan guidelines* database.

2. The guidelines will be briefed to the agency, through the process of *brief guidelines* to agency in order to *create media plan*.

3. *Create media plan* process will also take the data from *contact report* which made by *Account Executive*.

4. The result of *create media plan* process (*media plan draft*) then will be sent directly to *Account Executive*. 
Analyze Media Plan

- Media Review Presentation
- Media Review Presentation
- Media Review Presentation
- Media Review Presentation

- Product Manager
  - 5.1 Show Presentation to Product Manager
  - Product Manager Analysis

- General Manager
  - 5.2 Show Presentation to General Manager
  - General Manager Analysis

- Marketing Manager
  - 5.3 Show Presentation to Marketing Manager
  - Marketing Manager Analysis

- Analyzed Media Review for Marketing

- Managers' Analysis

- 5.4 Revision for Future Guidance
3.7.3 DFD Level 1

ANALYZE MEDIA PLAN

DESCRIPTION

1. Account Executive sent media review presentation to Product Manager, Marketing Manager, and General Manager, through the process of show presentation to Product Manager, show presentation to Marketing Manager, show presentation to General Manager.

2. Product Manager, Marketing Manager and General Manager then will put their analysis in the database called analyzed media review for marketing, the data itself were: Product Manager Analysis, Marketing Manager Analysis and General Manager Analysis.

3. The gathered analysis then will be called as Managers’ analysis, and will be used in the process called revision for future guidance.
3.8 EXISTING PROBLEM

Stakeholder of the problem in Mayora Biscuit Division will be listed as below:

1. Product Manager
2. Marketing Manager
3. General Manager
4. BOD and MD
5. Agency
6. Sales

The problem that occurred in Mayora Biscuit Division is divided into two sections, namely:

The current system still has the tendencies to rely the analysis of the media review to the agency

Description of problem:

1. From the context diagram above, we can see that the process from making media plan until the result (media review) was shown. Even Mayora Biscuit division complying a very strict supervision process, which can be seen from the procedures and policy of verifying media plan and also the approval of the action plan, we cannot deny, the majority process of making media plan and media review were made by the agency.
Agency took the data to make media review from AC Nielsen’s survey in the field of Television advertising. Mayora Biscuit division also uses the service of AC Nielsen but in other respective fields. The reason why all source was taken from AC Nielsen, because AC Nielsen is the best and the biggest survey company in the world.

However, the Subjective manipulation of data may occur, since the agency might have their own interest towards the company.

It's might possible to ask the AC Nielsen data in order to get the verification, however it will take much time for the manager to manipulate the data themselves in order to get the information that they need. Since the managers also have a high workload in the office.

The other problem that might occur is the fact that shows high number of agency’s worker turnover. They might give the information that has connection with Mayora Biscuit division’s media strategy to the competitor when they left the agency that connected with Mayora and joining the agency that connected with Mayora competitor.
2. The media review still not connected with the sales number.

Currently Mayora Biscuit Division still don’t has the system that can shows the connection within the ATL promotion that executed through the media plan, with the sales number generated from SAP. So that Managers should do it manually, as seen on the context diagram of Mayora Biscuit division’s current system.

However, it’s impossible for Mayora Biscuit Division to give the sales number to the agency to being analyzed along with the media review, since it’s very confidential, in addition the high turnover issue among the agency, comply here as well.

3.9 ALTERNATIVE SOLUTION FOR THE PROBLEM

In order to solve the Problem, an Executive Information System called as RAMESYS will be created as well. RAMESYS it self stands for Mayora Media Effectiveness Analysis System. The system will be the solution for the existing problems inside Mayora Biscuit Division. RAMESYS will replace the agency in making the media review analysis process and will be directly linked to the sales data. A brief explanation above this system would be mentioned below:

1. Mayora will still use the agency in order to create the media plan.
2. Mayora will also use the AC Nielsen’s data given from the agency, in order to input all of the data into the RAMESYS.
3. RAMESYS then will manipulate the data and make the analysis from it.
4. The Managers would be able to link the media review analysis with the sales data, so that they can see whether the Above the Line campaign has the impact towards the sales number.

5. The system synchronization with the sales number will be assumed effective 1 week from the premiere of the advertisement aired.

This system will be made based on the characteristic of EIS in the area of:

(Turban & Aronson, 2001 p.311).

![Figure 3.6 Characteristic of EIS on Quality of Information](image-url)
Figure 3.7 Characteristic of EIS on User Interface
Figure 3. 8 Characteristic of EIS on Technical capability provided
The system will ensure the confidentiality of the data and information connected with Mayora Biscuit Division above the Line activities. Since it will be run and administrated by Mayora employee itself. In addition, SBU Managers wouldn’t need to synchronize the media review presentation with the sales data manually.
CHAPTER 4

DESIGN OF THE PROPOSED SYSTEM

4.1 CHARACTERISTIC OF THE SYSTEM

RAMESYS has several capabilities that will enable the user to feel comfortable and able to make analysis efficiently, since the features and functions are designed to ease the user. Below is the capabilities that owned by RAMESYS. Each of the capabilities will be elaborated (Watson, Houdeshel & Rainer, JR, 1997 p.155).

4.1.1 Ease of use development

- Applications to be easy and quick to develop
  the applications that contained in RAMESYS are simple but useful to be used by the top managements. The simple concepts indeed will give easiness for the programmer to create the applications as well. In addition for the development team, the time constraint can be accommodated as well.

- New users to be easy and quick to add to the system
  In order to accommodate the increase number of the user, the system will be designed to accommodate the increment number of the user as well. This capability made by the consideration that it will be possible top management be added or any person will be added in order to be involved with the business process of Mayora biscuit division.
• Suitability for quick prototyping
the simple application will be suitable for creating quick prototyping, so
that top management of Mayora biscuit division, will be able to see the
concrete concept of RAMESYS; in addition, the project team will be able
to socialize the use and capabilities of RAMESYS.

4.1.2 Learning
• Learning time for developers
the ease concept of RAMESYS will be feasibility for developer, since
they have the needs to understand the concept fast. Because they have
The responsibility to develop the project and deliver it based on the
agreed timeline.
• Learning time for user
we should not abandon the learning time for user as well. Since most of
the user are the top management of Mayora biscuit division, and they
need to learn fast in order to adapt the business process of the
RAMESYS, which specially deigned to fit the needs Mayora biscuit
division.
• Availability of appropriate documentation and tutorials

The project team will create the documentations and tutorial based on the nature of RAMESYS and its business process. This documentation and tutorial, will be useful in case if there’s a need of review the technical process of the system or if there’s a need for user to learn about the business process of RAMESYS.

• Customized menus for each user

RAMESYS will be divided in to two kinds of menus, user and administrator. For administrator most of the menu will be customized to input and integrate the data, hence for user, the menu will be customized to view the result of what the administrator input.

• Various modes of use (mouse, touch screen)

RAMESYS will be designed to meet today’s technology modes of use, such as mouse and touch screen for PDA. Since Mayora also has Wireless LAN connection, so it will be possible for the top management, to access the data with a high mobility. In addition, RAMESYS is also capable to be accessed from any place with internet connection.

• Minimal number of keystrokes

the number of keyboard uses will be minimized, since the user only needs to click and select the application buttons on RAMESYS. This will ease the learning process of the user and administrator, since they don’t have to input anything into the system.
• Consistent use of functions

function on RAMESYS will remain the same from the first time it was
designed and documented, and also the label on the application will also
remain the same, this consistency was made so that the user will get used
to with the program, and the new user can adapt rapidly with RAMESYS.

4.1.3 Maintenance

• Easy to add and modify data

RAMESYS was designed to be easily added by data, especially from AC
NIELSEN review, and other data that has relevancy with media review.
In addition the data inside RAMESYS is easy to be modified by the
administrator in order to fulfill the requirement given by top
management.

• Ability to maintain integrity and timeliness of data

administrator and top management of Mayora biscuit division has to keep
the integrity and timeliness of data, so that they can get the most accurate
and up to date sales impact and media review result. In addition, from the
previous timeline, Mayora biscuit division could keep track on the current
trend and compare between the current condition and previous condition.

• Easy to add and modify screens, reports and graphs

the report that created in RAMESYS could be set in the form of
spreadsheet, pie chart and bar chart. This thing is to fit the conformance
of the top management, since every person has their own favourites.
• Ability to convert existing screens, graphs

the screens and graph appearance in RAMESYS was designed to be converted in to spreadsheet. Since the consideration is that, in spreadsheet, the numbers can be set in better order, crunched and manipulated as well. This thing will ease the job of administrator when he or she input the data into RAMESYS.

• Ability to monitor system usage

project team for RAMESYS has the to monitor the usage of the system, has the system help the work of Mayora biscuit division efficiently, has the system meets it’s best form to fit the business process of Mayora biscuit division. If at the end, the performance of the system has not optimized yet, then the project team has to find the area that need to enhance and elaborated more.

4.1.4 Reporting Capability

• Reports to be presented as both graphs and table

RAMESYS report would be presented as graphs table and chart as well. The content of report would the name of the program, day of the program, type of the program, channel of the program, length of the program, TV rating of the program, cost of the program, share of voice, share of expense, gross rating point (GRP), reach, advertiser, campaign period, manufacturer product. The choice of form is based on the will of the user as well.
• Ability to display graphs, tables and text on single screen.

The graphs, table and text on the report will be fit into single screen in order to ease the user or viewer to link and see the correlation between one parts of the report with the other part as well. The purpose of this setting is also to reduce the failure that caused by messy screen appearance.

• Ability to switch between tabular and graphic output

This feature is to ease the user and viewer when they are viewing the report, because for some people graphic presentation is easier to interpret, on the other hand for some people data written in table is better.

• Effective presentation of time series data

Since one of RAMESYS’ function is to compare between historical data or condition, with current condition as well, the report has to present the time series of data effectively and accurately. So that the sales or impact of advertisement burst trend can be monitored and analyzed.

• Ability to highlight variations

RAMESYS report also has the abilities to highlight variations. Such as difference between sales numbers per year, difference of sales number before and after the advertisement burst, differences in number generated between agency’s media review and media review created by RAMESYS.
- Support interactive user defined variance criteria
top management of Mayora might want to add the defined variance that
considered important to them, RAMESYS will be set to accommodate the
situations, the condition will be considered as constraint or filter.

- Retrieval of historical data as required
in order to see the trend or knowing the previous condition, the retrieval
of historical data is enabled for RAMESYS, since RAMESYS is
connected with database that contain data from the past and current.

- Maintain historical data and discard after a user defined period
the historical data will be maintained and secured with the procedure and
policies of Mayora IT division, in addition the data could be discarded
following the length time defined by the IT division as well.

- Facility for personalized queries
user can choose the queries that they need from the database, and can be
constrained and defined according to the timeline base.

- Explanatory notes to be attached to reports
after creating a report, or maybe after viewing report, administrator or top
management, might be want to add their comment or explanatory mode
in order to make the other viewer notice about some trends or
perspective.
4.1.5 Graphic Presentation

- Quality of graphics
  the graphics presentation in RAMESYS will be created in good quality, the purpose of the quality is to give a clearer presentation for the user. In addition, the good quality will make the user feel more comfort while reading the report.

- Speed of presentation
  the graphical interface will set to change spontaneously according the speed of viewer while reading the report. Since user might read the report just like skimming (this means that the change of the graphic will quiet fast). In addition some user might read the report tentatively (this means that the user will read the report with quite slow movement).
• Effective use of default color coding

RAMESYS will use default color coding as the sign for the viewer, the chosen color is the common color that used in the daily life. Red is to give notification that some thing is going wrong, such as decrease of sales number, difference in some area (for example difference between media review created by RAMESYS and the media review created by the agency) the difference itself is set into plus minus 10 percent. Green as good indicator, such as increase in national total sales number after the burst of the advertisement. Other color will be use to highlight something that going to be noticed to other viewer, such as explanatory notes, curiosity about some parts of the report, etc. the highlighter’s color can be set according to user’s will.

• Ability to highlight areas of concern

user or administrator might highlight the areas of concern in the report using the highlight capabilities of RAMESYS. This feature is made in order to ease the top management and administrator if they meet the unusual founding among the number or trend and intend to notify other.

• Availability of individual color schemes

user might change the default color provided in the basic arrangement of RAMESYS, such as highlighter’s color, notification color code according to their own will. The purpose of this feature is to personalize their RAMESYS. The changes will not affect other, since it’s set to be local (only in their personal computer).
• Ability to include explanatory notes for each graphs

In order to give a comment or description to graph that appeared in the report, RAMESYS was equipped with the feature to attach or include explanatory notes for each graphs. The purpose of this function is to ease the communication between the user and viewer as well. This function is in line with the highlight function, so that after highlighting the part that needs to be noticed or concern, they can give comment about it.

• Ability to produce a variety of graph (pie, bar, 3-D bar, line)

RAMESYS equipped with the feature to produce graph with several variety, the purpose of this function is to ease the user to view the graphical presentation based on their comfort ness.

• Easy to produce executive defined graphs

this function is one of the main purpose of RAMESYS, namely to produce the defined graphs, that can help the executive to make their analysis easily. For instance if the top management of Mayora biscuit division intend to know about the reach of their advertisement from a specified month and in a specified television with a specified age of viewer. Than the administrator can slice and dice the database, and produce the graphs easily as well.

• Automatic scaling

the created graph would be scaled based on the given parameter and quantity of the data as well, so that the graph would fit the computer screen, in addition easy for user to read as well.
• Automatic legend

In order to make the user understand about the current graph, there will be a legend to explain about the graphs itself.

4.1.6 General functionality

• Built in statistical procedures

The standard statistic and mathematical procedures will be included in the system in order to ensure the accuracy and correctness of the system as well, the function itself will be, add, subtraction, divide, multiply, average, median, mode, increment and decrement.

• Multiple task to be operating and displayed concurrently

While opening the RAMESYS, user still can open the other application or windows concurrently, such as when they want to open SAP application, in order to import the sales data, opening the other Microsoft office application, in order to relate RAMESYS with other job, or even opening the music player application along with the work as well.

• Import data from spreadsheet

The data that are going to be imputed into RAMESYS, will sourced from the AC NIELSEN review (already in the form of spreadsheet) and SAP sales data which converted into spreadsheet. That’s why, this function is a function that located in the RAMESYS.
4.1.7 **Data handling**

- Version checking to ensure all users are accessing the same version of software, applications, and data. Software, applications, and data will be ensured as the same version, since it will be standardized by the regulation of Mayora biscuit division, application that related with the use of RAMESYS are Microsoft office and SAP.

- Interfaces with external databases and internal systems. RAMESYS itself will be connected with the database of SAP and BI which is one of the internal systems in Mayora. The connection itself is to import the sales number and integrate it with the report as well.

- Efficient storage of time series and data. The data from previous year, especially the sales data, has to be maintained correctly by IT division of Mayora. So that the data that needed can be imported into RAMESYS, while the less important data (the data that already take a long time ago) can be cleaned from the database, according to the procedure and policies which created by IT division and other division, especially the biscuit division.

- Efficient indexing and retrieval mechanism. Since there’s a lot of data in the database, it should be indexed, in order to make the search and retrieval of the data become efficient and easy. Since if the indexing system is poor, it will take a long time to search a data.
• Instantaneous distribution of new data among user after there’s a new data which given by the agency or retrieved from the SAP server, it’s better to distribute it immediately, since it will help the business process of RAMESYS. Since we know that RAMESYS is depend on the data heavily. In addition by using the latest data, top management can make a new analysis or decision faster.

• Ability to consolidate spreadsheet and numerical data with specific parameter that stated in RAMESYS into EIS

RAMESYS has the ability to consolidate data with the formats of spreadsheet into EIS, for instance, the parameter that show GRP, SOE and SOV that contained in the AC Nielsen review given by agency and the parameter that given from agency’s media review

4.1.8 Performance

• Rapid response time

the response of RAMESYS will set into rapid, following every action that created by the user, such as clicking, dragging, typing comment, and also every time administrator retrieve the database from SAP. This condition is set in order to prevent the emotional act that might occur because of the slow response.
• Capacity issues

the number of RAMESYS user will be based on the whole amount of Mayora biscuit division top management, namely five persons and not to close any opportunity that the number of user will be increased from the time the system is implemented. In addition the volume of data inputted will be based on the number AC Nielsen review given by the agency.

• Recovery facility

the recovery facility will follow the recovery system and procedure of Mayora IT division.

4.1.9 Security

• Restricted system access

the usage if the system is restricted to Mayora biscuit division top management, Board of Director, Managing Director, and the administrator as well. Since RAMESYS itself contain the sales data, which would be fatal if being acknowledge by other party.

• Restricted function access

the function that contain by RAMESYS restricted only to Mayora biscuit division top management, Board of Director, Managing Director, and the administrator as well. Only the name mentioned above can manipulate the data as well. Other party may only view but not to manipulate.
4.1.10 Environment and hardware

- Local access
  
  the access of the system restricted just for the Mayora biscuit division user which has granted access to RAMESYS, this condition is to prevent the leak of data and information outside.

- Multi user access to the same data
  
  user will have the same access towards RAMESYS database. The database itself connected with SAP database. So that user could also access the sales data in order to monitor and get information they want about the sales number, whether it was impacted by the advertisement burst or not.

- Portability
  
  user may access RAMESYS from any place that has internet connection,

4.1.11 Documentation

- Manual, introductory guide, tutorials
  
  the manual, introductory guide and tutorials will be made by the project team, along with the SDLC process of RAMESYS creation. This method was implemented in order to prevent any miss of information capturing if the documentation was made after the project is done.
• Overall style of documentation

the overall style of documentation will be made in the form of tutorial books, which divided into chapters that will cover the usage of RAMESYS.

• Sensitive help screens

the help screens will appear directly when user put the mouse close to the application inside RAMESYS. The direction inside the help screen will be made in short sentence but directly into the purpose of the application itself.

• Meaningful error messages

the error messages in RAMESYS will be made in short but clear, so that user will directly understand the mistake or error that appears in the usage of RAMESYS, whether it was cause incidentally or coincidentally by user.

• Stand alone chapters

the chapters in the documentation of RAMESYS will be made in stand alone documentation style, so that user will be easy to find the information or help that they needed.
4.2 Data Flow Diagram

The data flow diagram and context diagram will describe how RAMESYS will handle the process of making the media review and how to integrate the media review with sales number obtained from SAP server. Top management indeed can choose the parameter that they would like to see in the summary or even in the report. Top management also can see the form of report, such as pie chart, bar chart and also spreadsheet form. The process will be explained more clearly in the context diagram and DFD bellow.
4.2.1 Context Diagram
Description:

**Media Review**

Description:

1. Product Manager Use *briefing* and previous *media review analysis* as the guidelines for agency, to create the media plan through the *Account Executive*.

2. Account Executive will pass the *briefing result* to the *Agency Based System*.

3. *Agency based system* will give the *media plan draft* as the result of the guidelines.

4. The *media plan draft* then will pass by the *account executive* to the *product manager*.

5. Product manager then will ask the verification from Marketing Manager through the process of *verify media plan*.

6. *Product manager* then will ask the verification from *Marketing Manager* through the process of *verify media plan*.

7. *Marketing manager* then will ask the verification from *General Manager* through the process of *verify media plan*.

8. *General Manager* then will ask the verification from *Board of Director (Owner)* and *Managing Director* through the process of *verify media plan*.

9. *Product manager* then will ask the verification from *Marketing Manager* through the process of *verify media plan*. 
10. After reach the highest hierarchy (BOD and MD) the media plan will be verified and sent back to the product manager by means of the same process with asking the verification, the data’s name will be verified media plan.

11. Product Manager will then give the verified media plan to the account executive and pass the order to execute the media plan to the agency based system.

12. After the media plan has been executed, agency based system, give the media review to account executive.

13. Account executive then will give the media review presentation to the Product Manager.

14. Product Manager then will send the media review to RAMESYS administrator in order to be compared with media review created by RAMESYS.
Media Buying

1. *Product Manager* made an *Action Proposal* and asks the approval from the *Marketing Manager, General Manager*, and *BOD and MD* through the process of *action proposal approval*.

2. BOD and MD then will return the approved action proposal directly to the *Product Manager*.

3. *Product Manager* then sent the *approved action proposal* and *verified media plan* to *Commercial Promotion* in order to be verified through the process of *verify AP with media plan*.

4. *Commercial Promotion* then sent the *verified AP and media plan* back to the *Product Manager*.

5. By having the *verified AP and media plan*, *Product Manager* could request the purchase order to *Purchasing Director*.

6. The *purchase order* then sent directly to the *Account Executive* as the acknowledgement that we agree to pay for the media plan.

RAMESYS

1. *Marketing manager* will send *AC Nielsen review* to *RAMESYS administrator* in order to be processed by *RAMESYS*.

2. *RAMESYS administrator* then will input *media review* and *AC Nielsen review* into *RAMESYS*.

3. *RAMESYS* then will generate *RAMESYS report* which will be given to *Product Manager, Marketing Manager, General Manager, BOD and MD*. 
Figure 4. 2 DFD Level 0 RAMESYS
4.2.2 DFD Level 0

MEDIA REVIEW

Description:

1. Product Manager sent the data of previous media review analysis to the process of create media plan briefing. The result of the briefing then will be stored in contact report database.

2. Product Manager also gives briefing to Account Executive, which produce briefing result.

3. Briefing result and contact report will be used in create media plan process. The result of the process will be stored in draft database.

4. Media plan draft then will be sent to through the verify media process to the Marketing Manager, General Manager, and BOD and MD, the result (verified media plan) will be sent to Commercial Promotion.

5. In line with the media plan, Product Manager also create action proposal and then ask for the approval from Marketing Manager, General Manager and BOD and MD through the process of approve action proposal.

6. The result of the approve action proposal process is approved action proposal and will be sent directly to the Product Manager.
7. *Product Manager* sent the approved action proposal to *commercial promotion* in order to be verified.

8. *Commercial Promotion* will then verify the *approved action proposal* with the *verified media plan* through the process of *verify action proposal with media plan* and the result will be saved in the *verified action proposal with media plan* database.

9. After the *Commercial Promotion* verify action proposal with media plan, *Product Manager* will request *purchase order* to *purchasing director*, and the result will be sent directly to *Account Executive* as the representative of the agency.

10. Soon after receiving the purchase order, *Account Executive* will notify *Agency* to execute the media plan through the process of *execute media plan*.

11. The result will be stored in the *executed media plan* database and will be use in making the media review through the *create media review* process. The result will be saved in *media review presentation* database.

12. The media review then will be sent to *Product manager, Marketing manager, General Manager, BOD and MD*. 
RAMESYS

1. Marketing Manager then will send AC Nielsen review and media review to RAMESYS administrator. AC Nielsen review will be used in the process of making RAMESYS ‘media review. In addition the media review itself will be used in the process of comparison with RAMESYS’ media review.

2. RAMESYS administrator through the process of log in to RAMESYS input the log in request, which will be sent into RAMESYS database, in addition if the verification is succeed, then the system will send the feedback as access granted.

3. Product Manager, Marketing Manager, General Manager, BOD and MD will also do the same log in process into the RAMESYS, in order to view report or do other action.

4. RAMESYS administrator through the process of input AC Nielsen review will put AC Nielsen review. The process continued with generate RAMESYS summary that will be result a RAMESYS summary.

5. RAMESYS administrator then will obtain the SAP sales data through the process of import SAP sales data.

6. SAP sales data and RAMESYS summary then will be integrated through the process of integrate RAMESYS summary with sales data, which then will generate integrated RAMESYS summary with sales data.
7. *RAMESYS administrator* then will generate *RAMESYS report* through the process of *generate report*. The report will also be saved in *RAMESYS database* as well.

8. *Product Manager, Marketing Manager, General Manager, BOD and MD*, then will do the process of *view report*, which will result in *viewed report*.

9. *Product Manager, Marketing Manager, General Manager, BOD and MD* will *analyze trend* which the result will be stored in *RAMESYS database*.

10. *Analyzed trend* then will be putted in the process of compare *report with media review*. This process is to compare *RAMESYS report* with *media review* in order to check the integrity of agency.
4.2.3 DFD Level 1

REQUEST AC NIELSEN REVIEW

Marketing Manager

AC Nielsen review

10.1 Choose AC Nielsen review
Scope from the agency

Selected AC Nielsen scope

10.2 Ask agency to give the review

AC Nielsen review

RAME SYS database
Description:

1. Marketing manager send the AC Nielsen review request, and will do the process of choose AC Nielsen review scope from the agency. The result will be selected AC Nielsen scope, then through the process of ask agency to give the review, AC Nielsen review will be saved in the RAMESYS database and also sent to Marketing Manager.

4.2.4 DFD Level 1

Input AC Nielsen data

[Diagram showing the process flow involving RAMESYS administrator, RAMESYS database, AC Nielsen review request, AC Nielsen review details, Conversion of AC Nielsen review data into spreadsheet, Selected AC Nielsen parameter, Input parameter into RAMESYS, and Converted AC Nielsen review data.]
Description:

1. *RAMESYS administrator* request data from the *RAMESYS database* in order to obtain *AC Nielsen review* through the process of *draw data from AC Nielsen review database*.

2. *AC Nielsen review* then will be converted into spreadsheet, through the process of convert *AC Nielsen review data into spreadsheet*. The result will be converted *AC Nielsen review*.

3. The data from converted *AC Nielsen review* then will be selected through the process of *select parameter*.

4. *Selected AC Nielsen parameter* then will be imputed into *RAMESYS* through the process of input *parameter into RAMESYS*.

5. The result of the process will also form in *AC Nielsen review* and stored in *RAMESYS database*.
4.2.5 DFD Level 1

DFD Level 1
Import SAP sales data

1. Marketing Manager sends a request in order to determine sales data scope called sales data scope request.
2. The result called sales data scope then was sent to request sales data from SAP server. In order to obtain the sales data scope, RAMESYS administrator generate sales data request.
3. The result of the process will be called SAP sales data.
4. SAP sales data will be inputted to the process of convert SAP sales data and this process will generate converted SAP sales data, which will be stored into RAMESYS database.
4.2.6 DFD Level 1

Figure 4.6 DFD Level 1 Generate RAMESYS summary
Description:

1. *RAMESYS administrator* input *AC Nielsen review* in order to do the process of *input AC Nielsen review*.

2. The next process is to input *AC Nielsen review* into the *select RAMESYS parameter* process. This process generate then generate, *campaign period shown*, *advertiser shown*, *product shown*, *programme shown*, *advertisement length shown*, *TVR shown*, *programme cost shown*, *cost per TVR shown*, *reach calculated*, and *GRP calculated*, *SOE value shown*, and *SOV value shown* as the result.

3. The next process is to input all of the parameter above into the process of *order to show all selected parameter*. This process happened when user (in this case is the administrator of RAMESYS) would like to see the result of the chosen parameter in his or her PC. The selection of the parameter could be based on the order of Mayora biscuit division top management or based on the procedure of RAMESYS usage.

4. The result of *order to show all selected parameter* is *RAMESYS summary* which then stored in *RAMESYS database*.

5. Instead of storing the *RAMESYS summary* *RAMESYS administrator* also can print the summary, so that Mayora biscuit division can put the summary in the form of hard copy for the purpose of documentation.
4.2.7 DFD Level 2

Figure 4.7 DFD Level 2 Generate RAMESYS summary

14.1
Input AC Nielsen

14.2.2
Input campaign period

14.2.1
Order RDP summary

14.1.1
Generate RAMESYS summary

AC Nielsen

Campaign period shown

14.2.3
Input audience

14.2.4
Input market share product

14.2.5
Order RDP programme

14.2.6
Order to show advertising
programme cost

14.2.7
Order to show
advertising programme

14.2.8
Order to show TV rating

14.2.9
Order to show programme

cost

14.2.10
Order to show

cost per TV rating

14.2.11
Order to calculate
reach

14.2.12
Order to calculate CRP

Programme shown

14.3
Order to show
selected parameter

RAMESYS summary

RAMESYS database

14.4
Print summary

Reach calculated

CRP calculated
Description:

1. *RAMESYS administrator* do the *input AC Nielsen review* process, the result (*AC Nielsen review*) then will be inputted into the process of *order to create summary*. *Order to create summary* is the first process in order to *select RAMESYS parameter*. This process then will open the option to select the parameter needed.

2. From all of the parameter, there is three parameter that manually inputted by the user in order to ask the computer show the all the parameter of RAMESYS. The three parameters are *input campaign period* (campaign period is the time based on month, week that the advertisement showed on TV, since the first time it burst until it finally stops), *input advertiser* (advertiser is the companies that are doing the advertisement, for example Mayora, Orang Tua Grup, and Kraft), and *input manufacturer product* (manufacturer product is the product that will be advertised in the TV, for example Roma Kelapa, Biskuat).
3. *Input campaign period* will result *campaign period shown*, *input advertiser* will result *advertiser shown*; in addition *input manufacturer product* will result in *product shown*.

4. The rest of the parameter then will be showed after those three parameters were inputted.

5. The parameters are *order to show television programme* which result *programme shown*, *order to show advertisement position and total spot in break* which resulted *position and total spot shown*, *order to show advertisement length* which result *advertisement length shown*, *order to show TV rating* which result *TVR shown*, *order to show programme cost* which result *programme cost shown*, *order to calculate reach* which result *reach calculated*, and the last one is *order to calculate GRP* which result GRP calculated.

6. The next process is *order to show all selected parameter* which already explained in DFD level 1 of creating RAMESYS summary.

7. In addition the last process will also to stored the data in the *RAMESYS database* or *print summary*.
4.2.8 DFD Level 1

Figure 4.8 DFD Level 1 Integrate RAMESYS summary with sales data

Description:
1. RAMESYS administrator send sales data request to RAMESYS in order to retrieve SAP sales data before advertisement burst, the result is previous SAP sales data.
2. RAMESYS administrator also retrieve RAMESYS summary, which generate the RAMESYS summary.
3. Then *RAMESYS administrator* do the process of *retrieve SAP sales data 2 weeks after advertisement burst*, which generate *future SAP sales data*.

4. The next process is to *retrieve national general trade sales* which generate *national general total trade sales*, then to *retrieve modern trade total sales* which generate *national modern trade total sales*, and the last retrieval process will be *retrieve national institution total sales*, which generate *national institution total sales*.

5. The next process will be *check sales impact after advertisement*, which will result *checked sales impact*.

6. *RAMESYS administrator* will order computer to compare sales number through the process of *order to compare sales number with sales data before advertisement burst* which generate *sales number compared*.

7. The next process will be *create sales comparison summary* which will generate *sales data*.

8. The last process will be *integrate sales comparison summary with RAMESYS summary*, which will resulted in *integrated RAMESYS summary with sales data*. 
4.2.9 DFD Level 1

Generate report.
Description:

1. *RAMESYS administrator* ask for log in to the system, through the process of *log in as administrator* and the feedback will be *access granted* if the verification of the user is correct.

2. *RAMESYS administrator* then do the process of *integrates sales comparison summary and RAMESYS summary* which has the result of *integrated RAMESYS summary with sales data*.

3. The administrator can set the report in the needed form through the process of *order to generate report in bar chart, order to generate report in pie chart, and order to generate report in spreadsheet*. The result of the process will be *pie chart report, bar chart report, and spreadsheet report*.

4. *RAMESYS administrator* then asks the computer to show the sales trend impacted by the advertisement, through the process of *order to show sales trend impacted by advertisement*.

5. The result of the process will be *approved order*.

6. *RAMESYS administrator* ask the computer do the process of *order to highlight the differences of sales growth before and after burst VS target*, the purpose of this application is that top management of Mayora Biscuit division can see whether the sales growth impacted by the burst is near or far from the targeted sales number.
7. *RAMESYS administrator* also asked the computer do the process of *order to show impact created by commenced GRP and SOV with the resulted sales number*, the description of this process will be explained bellow:

<table>
<thead>
<tr>
<th>Better</th>
<th>February-March 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRP = 3000</td>
<td>SOV = 30 %</td>
</tr>
<tr>
<td>Sales = 150.000 – 200.000</td>
<td>Growth = 33% (200.000 - 150.000 / 150.000)</td>
</tr>
</tbody>
</table>

*Table 4.1 Growth of Better Biscuit*

Interpretation: in month February-March 2007, the Mayora’s biscuit division product, in this case is Better, with GRP amount of 3000 and given Share of Voice amount of 30 percent, impact the sales in the way of growth 30 percent. (From 150.000 into 200.000). This growth is good, and will be marked with green color.

8. *color criteria for the growth are:*

| 15 percent – 30 percent | Green color |
| 0 – 15 percent | Yellow color |
| Below 15 percent | Red color |

*Table 4.2 Color Criteria for Growth*
9. The next process is *RAMESYS administrator* asks the computer to highlight differences between current burst and last burst, though the process of *order to highlight differences between current burst and last burst*. The description of the process will be explained below:

<table>
<thead>
<tr>
<th>Better</th>
<th>February-March 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GRP = 3000</td>
</tr>
<tr>
<td></td>
<td>SOV = 30%</td>
</tr>
<tr>
<td></td>
<td>Sales = 150,000 – 200,000</td>
</tr>
<tr>
<td></td>
<td>Growth = 33% (200,000 - 150,000 / 150,000)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Better</th>
<th>July – August 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GRP = 3000</td>
</tr>
<tr>
<td></td>
<td>SOV = 25%</td>
</tr>
<tr>
<td></td>
<td>Sales = 170,000 – 200,000</td>
</tr>
<tr>
<td></td>
<td>Growth = 20% (170,000 - 200,000 / 170,000)</td>
</tr>
</tbody>
</table>

*Table 4.3 Impact comparison between current growth and last growth*
When we do an observation between those two advertisements burst, we can see that, with the same amount of GRP (3000), but different amount of SOV (for the burst of July - August), Mayora biscuit division was given SOV with amount of 25%, the condition above impacted the sales for growing 20 percent.

As we can see that from the last burst the current burst is having a decrease of GRP with value of 5 percent, and difference of growth with value of 13 percent. The differences then will be highlighted by Ramesys. The criteria for this application are if there is any decreasing value then will be marked with red color, and if there is any increasing value will be marked with green color.

10. The three previous highlighting process will not done by themselves, the process will be done through the process of order to highlight differences occurred. The input for the process will be highlight report request.

11. The result of the process will be highlighted report, which then will be saved in the RAMESYS database. This report then will be withdrawn from the database by the top management of Mayora biscuit division, in order to be viewed.
4.2.10 DFD Level 1

Figure 4.10 DFD Level 1 View report in RAMESYS
Description:

1. Top management of Mayora biscuit division which consist of Product Manager, Marketing Manager, General Manager, BOD and MD do the process of log in to RAMESYS by inputting the log in request, which then will result a feed back of access granted if the verification is correct.

2. RAMESYS will took the RAMESYS report from the RAMESYS database, in addition the user can view the RAMESYS report in the form of spreadsheet, bar chart and pie chart, through the process of view report in spreadsheet form, view report in bar chart form, and view report in pie chart form. The result of this process will be report viewed.

3. User then will do the process of view highlighted differences in problem, in order to notice the differences that marked by the color code by the system. User can also put a comment in the report, in order to give comments or notification towards other user. The result of this process will be differences viewed.

4. User then will also do the process of view trends; the purpose of this process is that to see the trends that currently happen in the parameter inputted inside the RAMESYS.

5. In addition the last process will be to compare report with historical database.
4.2.11 DFD Level 1

Figure 4.11 DFD Level 1 Compare report with media review in RAMESYS
Description:

1. RAMESYS retrieve the *RAMESYS report* from *RAMESYS database*, through the process of retrieve *report*.

2. *RAMESYS administrator* also retrieves the *media review* from *media review database*.

3. *RAMESYS administrator* input the *media review* along with the system input the *RAMESYS report*, into the process of order *to compare report with media review*. The result of the process will be *compared report with media review*.

4. The next process will be *RAMESYS administrator* ask the computer to highlight the differences that might occur between the media review created by the agency and the media review that created by the *RAMESYS*, through the process of *order to highlight differences*. The result will be next stored in the *RAMESYS database*.

**4.3 RAMESYS Interface**

This is the interface design of RAMESYS, the design will shows the part that operate the function that being designed in the data flow diagram part. The flame orange color is chosen in order to make RAMESYS look futuristic and powerful. Hence the red environment in the design, is respectively follow the base color that used by PT. Mayora Indah, TBK.
The “R” letter is the abbreviation of RAMESYS, this letter is chosen in order to make user easier to remember the icon of RAMESYS.
2.

Figure 4. 13 RAMESYS LOGIN

This is the login page of RAMESYS, where user has to put the user ID and password in order to access inside the RAMESYS system.
This interface will appear if the user enters the correct *user id* and *password*. System will greet the user based on the time that the user accesses the system. User will face two options, namely *media review* and *sales report*. If user chooses *media review* then RAMESYS will lead the user into the parameters that has been designed in the DFD part. In addition if user clicks *sales report*, then it will lead the user to the integrated RAMESYS summary with sales data report.
4.

**Figure 4.15 Error Login**

This interface will appear if user enter the invalid *UserID* and *Password*. the *user Id or password invalid, please input correct user ID and password* will flashing, in order to warn user, to input the valid *user ID* and *password*. 
5.

Figure 4.16 Media Review menu

This interface will appear if media review option is chosen from the main menu. In this interface, user has to input the campaign period, and the advertiser. Along with this advertiser drop down button, there will be the products that produced by the advertiser.
This parameter is called calculate GRP, the base used to calculate the GRP is the amount of GRP commenced by product. The purpose of this parameter is to analyze the trend of GRP that commenced by the competitor in one week, RAMESYS will shows the pattern on how on product commenced their campaign, is it heavier on the weekend or on the weekdays. The menu button, will lead the user to the option between *media review* and *sales report*. In addition the exit button will lead user to exit the system.
The GRP calculation is based on the GRP commenced by the product in the program category. The menu button, will lead the user to the option between media review and sales report. In addition the exit button will lead user to exit the system.
Figure 4.19 Station Usage by GRP

This parameter will show the GRP commenced by product based on TV station, so that user can see the promotion strategy of competitor, by analyzing on which TV station, competitor commenced their GRP the most.
Figure 4. 20 SOE and SOV

On this parameter, we can analyze whether our spending already efficient or not, if we compare it with our share of voice.
Figure 4. 21 Sales Report

Sales report shows the summary of advertising campaign commenced by the product and the sales number that shown by the chart. Sales report also show the growth percentage, which will be highlighted according to the value of the growth. In addition if the user needs to dig and analyze more information about the sales number, they can directly click the SAP button or go to BI button. There’s also main menu button that will lead user to the option between media review and sales report.
Figure 4. 22 Sales comparison report

This report shows the comparison of impact that caused by advertising campaign towards the sales number between the current burst and the previous burst. There’s also a growth number shown with highlighted color that depends on the value of the growth. There’s also a main menu button, which will lead user back into the main menu.
Figure 4.23 Media review comparison

The function of this report is to compare the media review created by RAMESYS and media review created by the agency. This function is to prevent the manipulation that may caused by the agency. There are also menu and exit button in this page.
CHAPTER 5

IMPLEMENTATION PLAN

5.1 Implementation project plan

The implementation plan for RAMESYS will base on the theory of project management approach. However not all project management knowledge area will be covered here, the description of the covered area will be described bellow:

1. Project scope management

the scope for RAMESYS already explained at the first chapter, namely Creating a system called RAMESYST (Mayora Media Effectiveness Analysis System) in order to help the executive in making their decision based on the analysis of television advertising so that they can increase sales and knowing their competitor weaknesses, without any worries that they have to give the confidential data to other parties. In addition the scope for this implementation project plan is to develop, launch and integrate RAMESYS with Mayora’s business intelligence system.
2. Project time management

the time table to built RAMESYS will be developed at this section. The time table will include the time span to complete the work, developing a acceptable project schedule (according to the time arrangement of Mayora biscuit division), in addition the last part of this section, would be ensuring the completion of the project will be based on the schedule.

Figure 5.1 Time Table of RAMESYS project

3. Project cost management

the budget will be based on the calculation based on payment or salary of the IT employee, since the project staff is using the IT division employee of Mayora biscuit division. The man hour of working will be counted as well, but only just as the standard for the benchmark of the future project.
4. Project human resource management

the people that included in the project will be listed in the structure and their role and responsibilities will be stated as well, in order to give the project staff a clear view of their job and what should they done, in the development of the project.
Job description:

1. Project manager
   - Deliver the project on time
   - Keep the cost efficient
   - Keep the scope of the project

2. Deputy Project Manager
   - Substitute the position of Project Manager, in case that the Project Manager is incapable.
   - Since the Deputy Project Manager is in charge as Head of IT division, he will have the direct connection with the project technical lead, especially in the coding part.
   - be the field person in order to do the day to day controlling upon the progress of project.
   - Handle the hardware requirement request as the project progress and calculate all the cost expensed.

3. Test group
   - Do the system checking whether the system fit the stated scope and requirement or not.
   - Checking whether the business process already correct or not.
   - Do the stress testing.
- check the accuracy of data (is the output of the data still the same with the condition when it was inputted).

4. Project technical lead
   - keep the eye on coding process
   - make sure the system is good, even before it reaches the test group or the quality assurance
   - make sure the system fits Mayora Business Intelligence system

5. Quality Assurance
   - Check the accuracy if data after the coding process (the work is more in technical area)

6. Project risk management
   In the RAMESYS project planning, there are two risks that appear in to the surface, namely: in the technical part and the implementation part. In order to make a clearer view, the risk will be shown in the sample risk register as well.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk description</th>
<th>category</th>
<th>Root cause</th>
<th>triggers</th>
<th>Potential responses</th>
<th>Risk owner</th>
<th>Probability</th>
<th>Impact</th>
<th>status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Implementation Part</td>
<td>Technical risk</td>
<td>The lack of information about the integration requirement of both systems</td>
<td>The need of Mayora biscuit division to integrate Both systems</td>
<td>Emphasize the good control on coding part and implement a strict quality assurance</td>
<td>Project Manager and Mayora Biscuit division top management</td>
<td>medium</td>
<td>low</td>
<td>Waiting until the implementation part.</td>
</tr>
</tbody>
</table>

Table 5.1 Technical risk
<table>
<thead>
<tr>
<th>Rank</th>
<th>Risk description category</th>
<th>Risk description</th>
<th>Root cause</th>
<th>Triggers</th>
<th>Potential responses</th>
<th>Risk owner</th>
<th>Probability</th>
<th>Impact</th>
<th>status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Probability of data shortage</td>
<td>Shortage of spreadsheet data produced by the agency, that needed by RAMESYS</td>
<td>Business process continuity risk</td>
<td>Agency because of some cause or condition, stop giving the spreadsheet data produced by ariana</td>
<td>The working with specified agency that supplies ariana’s spreadsheet data has ended.</td>
<td>Ask another agency that has work relation with mayora to give the ariana’s data. The other option is Mayora buy ariana for their own.</td>
<td>Mayora Biscuit division top management</td>
<td>medium</td>
<td>low</td>
</tr>
</tbody>
</table>

Table 5.2 Process continuity risk
5.2 Technical requirement

Technical requirement for RAMESYS will be installed in the Mayora’s BI system. The current technical specification that used by the Mayora’s server for BI (Business Intelligence) system.

Business Intelligence’s front end part (the interface part that relate directly to user) uses the specification.

Processor: Intel Itanium 1.6 GHz

RAM : 8 Gigabytes

Hard Disk: San storage 800 gigabytes

RAMESYS will also uses this specification as the front end part.

As for the back end part (processing part), RAMESYS will use the same server as Business Intelligence

The specification for BI’s back end part is:

Processor: Intel Itanium 1.6 GHz

RAM : 16 Gigabytes

Hard Disk: San storage 800 gigabytes
CHAPTER 6

EVALUATION and CONCLUSION

6.1 Evaluation

Base on the interview with Mayora Biscuit division Top Management, and the presentation of RAMESYS concept at the development phase. Top management and user stated that they were satisfied with the concept of RAMESYS. Since it will help them to make a better analysis towards the media review and can link it with the sales number, to see whether user campaign has effect or not towards the sales.

6.2 Conclusion

The biscuit manufacturing business has grown so fast nowadays, many company try to stand out among their competitors with their way of promotion. Of course this promotion campaign has to increase their sales number. However as the manufacturer and the promotion principal, Mayora biscuit division already has a very heavy workload, and needs the help of advertising agency, in order to succeed their campaign.

However, as part of the business game, of course advertising agency has their interest and strategy in order to keep staying in the game. They might manipulate the numbers in the report that given to the company. In addition the turnovers of the agency workers may cause a big risk towards the company, especially Mayora biscuit division in this case.
That’s why the conclusion of this thesis would be:

RAMESYS can decrease or even eliminate the manipulation that might happen in the making of Media review as the parameter of the advertisement campaign that commenced by Mayora biscuit division. In addition the integration between media review and sales number will give Mayora’s biscuit division top management the perspective that will help them to make a good decision for the improvement of the promotion campaign itself. The improvement will be elaborated bellow:

1. RAMESYS can help the top management of Mayora’s biscuit division to compare the historical number of sales between every year that advertisement is being commenced. The comparison itself will generate the result whether the advertisement strategies was succeed to increase the sales number or not. By analyzing the result, Managers can use the best result pattern in order to be the consideration of future advertisement campaign strategies.

2. Managers can compare the character of each product category by analyzing the parameters that being used in RAMESYS. For instance, by taking the example of Better biscuits, we can see how many GRP is actually needed by Better to advertise efficiently, which target market is actually the best for better, which television channel and program is the best for better to advertise, etc.
3. In the sales area, Managers can see in which channel (GT, MT, or Institution) the advertisement give the impact towards the sales.

4. RAMESYS can be the trigger to analyze deeper for one condition, for instance, if the analysis needs more data or information that RAMESYS could provide, Managers can directly go to SAP or BI by clicking the button provided in RAMESYS.
CHAPTER 7

RECOMMENDATION

The design on RAMESYS is scoped to only cover the analysis of national coverage area and cannot reach the lower region. However it’s not a fatal weaknesses, since in the future Mayora can extend the functionality of RAMESYS by extends it’s capabilities to reach the lower region. In addition Mayora also needs to maintain its relationship with the agencies, in order to keep getting the flow of data that needed by RAMESYS.
REFERENCES


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Objective

An exciting internship, where there is opportunity to work and improve my skills especially in Information System areas

Education

2003-Present  Bina Nusantara International University
  Major: Information System (8th semester)

Additional skill

Fluent in English and Indonesian languages

Computer skills:
  ▪ Software Application : MS Office Suite (Access, Excel, PowerPoint, Word), Internet Browser
  ▪ System design

Personal Qualities

Interests: reading books, soccer, tennis and watch movies

Job History

2005  SMUK 4, Jakarta
       Vocational teacher

References:

Personal and professional references gladly furnished upon request

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