

# Digital Signage Effectiveness Measurement and Wayfinding Implementation As A Media Branding

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**ABSTRACT:** The retail business, from year to year, has experienced relatively rapid growth in Indonesia. According to the Ministry of Trade (Ministry of Trade), the retail business situation this year is getting exciting again. MP Mart is a retail located in the Education area. Many promotional media can be done, but MP Mart tries to use signage because it can quickly change the promotional content that will be carried out. MP Mart has implemented Digital Signage as its promotional medium, and then it is necessary to evaluate the effectiveness of the digital signage that has been carried out. The research method used is qualitative & quantitative to measure the effectiveness of Digital Signage using the EPIC Model, while the implementation of wayfinding uses qualitative methods.

**KEY WORD:** retail, digital signage, wayfinding

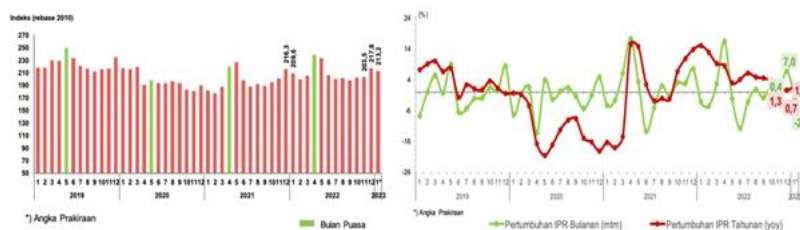
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## I. INTRODUCTION AND LITERATURE REVIEW

The retail business, from year to year, has experienced quite rapid growth in Indonesia. According to the Ministry of Trade (Ministry of Trade), the retail business situation this year is getting exciting again. (<https://economy.business.com> , 2022)

Figure 1: Real Sales Index & Real Sales Index Growth (%)



Source: <https://www.bi.go.id/id> , 2022

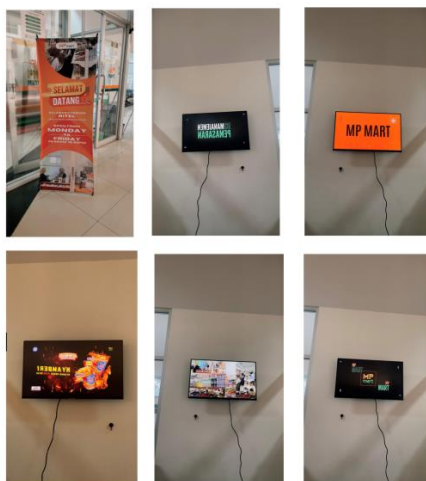
kindlyannual,developmentretailestimatedincreaseonJanuary2023.MatterThatreflectedfromIndexSaleReal(IPR)January2023as big213,2orgrow1.7%(year of year).Enhancementsaleretailpushedbygrowthgroupfood,drinkAndtobaccoWhichgrowin a mannermonthly.(<https://www.bi.go.id/id>, 2022)

OnDecember2022,growthretailannualwillstillpositive.IPRDecember2022calledincreaseas big0.7%(yoy),althoughmorelowcompared toincreaseonthpreviouslyas big1.3%(yoy).HappenenhancementonGroupToolInformationAndCommunicationas well asGoodsCultureAndRecreation,whereasonGroupEquipmentHouseLadderOtherAndEthnic groupSpareAndAccessoriesexperienceenhancementHoweverStillinphasecontraction.kindlymonthly,saleretailincreaseas big7.0%(mtm).ResultsThissupportedby growthWhichincreaseinallgroup,especiallyongroupICT,Whichfollowenhancementrequestconsequencepolicychangefrombroadcastingtelevisionanalogtotlevisiondigital,Whichfollowedby subgroupfashionAndCulture&Recreation . (<https://www.bi.go.id/id> , 2022)

MP Mart is a retail located in an educational environment. MP Mart's business activities currently sell food, beverages, MSME products, stationery and souvenirs. MP Mart conducts promotions by making Digital Signage and creating exbanners. Digital signage is a promotion used by MP Mart to inform them about their products, update the latest products, product promos and facilities at MP Mart. Many promotional media can be done, but MP Mart tries to use signage because it can quickly change the promotional content that will be carried out. MP

Mart has implemented Digital Signage as its promotional medium, then it is necessary to evaluate the effectiveness of the digital signage that has been carried out.

**Figure 2: Digital Signage MP Mart**



Signage and wayfinding are two meanings that can be used interchangeably but still have differences. Wayfinding is a directional system that includes architecture, layout and placement of identifiable elements. Signage is a signboard, logo, symbol and information that helps the wayfinding process. Signage is a graphic sign system that is needed by the general public when looking for specific locations and other related information (Calori & Vanden-Eynden, 2015: 5).

Wayfinding is a number of continuous *signage and signage* can stand alone as a media. *Signage and wayfinding* are divided into several types of classifications and functions based on the information content conveyed in the *signage* (Gibson, 2009: 47). Some of them: identification signs, directional signs, regulatory and prohibitory signs, orientation signs.

*Digital Signage* is an electronic display program, such as menus, information, advertisements and other messages on television. *Digital Signage* often uses technologies such as LCD, LED, plasma screens or other projected images to display content found in public and private places, including retail stores, restaurants and businesses. (Intel, 2013). *Digital Signage* targets audiences with relevant information. With the help of digital signs connected to the network, it is possible to send messages effectively, easily and efficiently. The following are the two main components in a *digital signage* infrastructure. The first is a player that connects the display to a network using a cable or wireless via a broadband connection to a *digital signage portal site*. The second is that users can control *digital signage displays* from anywhere via the Internet. Content can upload and display content directly from the Web or from a central location or server. (Intel, 2013)

So that digital signage can convey information in a manner adequate and correct to public, a number of aspects must be noticed. This aspect is as follows:

- a. Visibility is how digital signage can be seen with good by public. Things which support it so that more easily noticed like usage colour, placement product, use material, form product, installation, placement, etc, which in a manner line big related.
- b. Readability is how digital signage can serve information with correct so that reader can understand it with notices or phrase.
- c. Legibility possible reader read digital signage with correct with notice format the information, like a character letter (*typeface*) or fonts which used, contrast sentence, distance between writing and say character background behind and etc.

The work system is how this product works. *Digital Signage* has several work systems that can be useful in its operation, the explanation is as follows: (Alwi, 2019)

**1. Traditional method**

This traditional work system still uses USB as content storage to be displayed on *Digital Signage*. The USB is connected to the display and removed if there is *maintenance*. With a work system that requires that USB is always attached to the *Digital Signage*, information only displays content on that one *Digital Signage*, you cannot manage more than one *Digital Signage*.

## 2. Modern method

This work system uses the internet to manage content that will be displayed on *Digital Signage*, or what can be called a CMS. This CMS can manage more than 1 *Digital Signage* from even a remote place. There are two types of networks in the CMS that can be used, which are as follows:

a. LAN Network (Local Area Network)

This LAN / Ethernet cable regulates the data transmission path from the laptop/server that will be sent to all *Digital Signage* players that have been connected before. The data that has been received by *the Digital Signage* player is forwarded to *the Digital Signage* screen using an HDMI cable so that the planned content can be displayed on the screen.

This system is usually used in a company that has a local network only, so the available control range is limited because you have to use the LAN cable connection earlier, access is more difficult because you cannot access anything outside the local network.

b. Internet Cloud Network

This system is almost the same as a LAN system; this system does not use cables to control its devices but uses Cloud servers that are on the Internet so that *Digital Signage* can be accessed anywhere and anytime, more flexible provided that the central server and *Digital Signage* player are both connected to the Internet.

### 1.2 Research Objectives

Based on the background and the formulation of the problem, the research objectives are as follows:

1. Designing identity visuals Which are vital for use by MP mart.
2. Creating media promotion online and in print. Which creative use visual element?

### 1.3 Research Methodology and Data Analysis

Study This use approach study descriptive qualitative For describe And analyzed data Which There is.

To find out how much the level of effectiveness of digital signage can use the EPIC Model.

a. EPIC Models

The EPIC method includes 4 dimensions (*Empathy, Persuasion, Impact, Communication*) where these dimensions will be processed in the following stages: (Durianto, et al (2003) quoted from Ardhi journal (2018).

1. Calculates Average EPIC score.

Each respondent's answer to the given statement is given a weight. The way to calculate the score is to add up all the results of the value of each weight divided by the total number of frequencies.

2. Determine the rating scale range.

The rating scale range is used to determine the position of the respondent's response by using the score of each variable. The weight of the alternative answers formed from the rating scale technique consists of a range between 1 to 4 describing a very negative position to a positive position. The weight of the alternative answers formed from the rating scale technique consists of a range between 1 to 4 describing a very negative position to a positive position.

3. Calculate EPIC rate.

The next step is to find the EPIC score with the formula:

$$EPIC Rate = \frac{x Empathy + x Persuasion + x Impact + x Communications}{4}$$

4. Create a continuum line.

The continuum line is used to determine the level of effectiveness.

### 1.4 Findings and Interpretation

According to Sugiyono (2020: 121), the measuring instrument must be valid to obtain accurate data. Valid instruments can be used to measure what should be measured. Analysis Test validity following is the validity of the effectiveness of signage content at the MP Mart with the EPIC method that the authors obtained from the respondents.

**Table 1. Result Validity Test**

| Items | R Count | R Table | Information |
|-------|---------|---------|-------------|
| E1    | 0,792   | 0,361   | Valid       |
| E2    | 0,764   | 0,361   | Valid       |
| E3    | 0,764   | 0,361   | Valid       |
| E4    | 0,835   | 0,361   | Valid       |
| I1    | 0,644   | 0,361   | Valid       |
| I2    | 0,714   | 0,361   | Valid       |
| I3    | 0,739   | 0,361   | Valid       |
| P1    | 0,721   | 0,361   | Valid       |
| P2    | 0,828   | 0,361   | Valid       |
| P3    | 0,659   | 0,361   | Valid       |
| C1    | 0,811   | 0,361   | Valid       |
| C2    | 0,703   | 0,361   | Valid       |
| C3    | 0,742   | 0,361   | Valid       |
| C4    | 0,831   | 0,361   | Valid       |

Source : processed by the author, 2023

Based on the table above, the validity test uses R Table as big 0.361 from level significant as big 5% with the number  $n = 30$ . shows that all statements regarding the effectiveness of advertising use method EPIC on study This stated Valid. Because each total *Pearson correlation* of each question shows several more than 0.361 or  $r$  count  $>$  r table.

1. AnalysisTestReliability

**Table 2. ResultsofReliability Test**

| Cronbach's Alpha | NofItems |
|------------------|----------|
| ,908             | 10       |

Source : processed by the author, 2023

Based on Table 2 above, it can be seen that *Cronboach's Alpha coefficient* statement variable has a marked as significant 0.908, bigger than *Cronboach's Alpha* 0.60; it can be concluded that the variable statement in this study is *Reliable*.

2. EPIC analysis

The variable in this study is the effectiveness of digital signage content at MP Mart. Measurement effectiveness advertisement uses the technique *EPIC Model* Which consists of four dimensions, namely the *empathy dimension*, the *persuasion dimension*, the *impact dimension*, and the *communication dimension*. Of the four sizes, ten questions were represented by the authors asking respondents through a questionnaire.

3. Measuring the effectiveness of digital signage content at MP Mart is done by analyzing the questions and answers in the questionnaire from the results of data collection through distributing questionnaires to 400 respondents. The scale used in this study is: (1). Very Not Effective, (2). Not Effective, (3). Effective, (4). Very Effective.

**Table 3. Scale Range**

| Weight (B) Scale | Score | Scale Range      |
|------------------|-------|------------------|
| The biggest      | 4     | $(4-1)/4 = 0.75$ |
| The smallest     | 1     |                  |

Source : processed by the author, 2023

Then do the tabulation based on dimensions:

a. **Empathy Dimension** about the *empathy dimension* aim to determine whether consumers like digital signage content and describe how consumers see the relationship between the content and their personalities. Four questions, namely, represent the empathy dimension in this study:

Based on the results of consumer perceptions of the *Empathy dimension*:

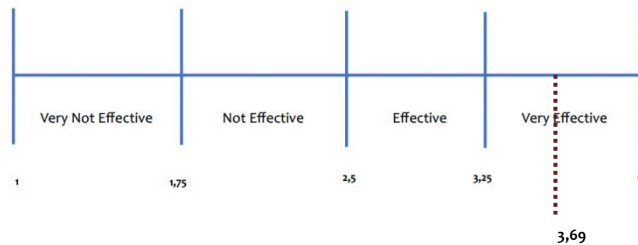
**Table 4. Average Empathy Score**

| Attribute          | Weight | Empathy 1             |                                | Empathy 2             |                                | Empathy 3             |                                | Empathy 4             |                                |
|--------------------|--------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|
|                    |        | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents |
| Very Effective     | 4      | 222                   | 888                            | 283                   | 1132                           | 297                   | 1188                           | 317                   | 1268                           |
| Effective          | 3      | 176                   | 528                            | 111                   | 333                            | 94                    | 282                            | 81                    | 243                            |
| Not effective      | 2      | 2                     | 4                              | 6                     | 12                             | 9                     | 18                             | 2                     | 4                              |
| Very Not Effective | 1      | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              |
| Total              |        | 400                   | 1420                           | 400                   | 1477                           | 400                   | 1488                           | 400                   | 1515                           |
| Average            |        | 3.55                  |                                | 3.69                  |                                | 3.72                  |                                | 3.79                  |                                |
| 3.69               |        |                       |                                |                       |                                |                       |                                |                       |                                |

Source : processed by the author, 2023

Knowing the results of calculating the average score from *Empathy 1, 2, 3, and 4*, a score of 3.69 is obtained when explained through the range of rating scales as follows:

**Figure 3. Evaluation Scale of the Empathy Dimension**



Source : processed by the author, 2023

Judging from the scale range of the effectiveness of digital signage content at MP Mart, the *Empathy dimension* is in the Very Effective category. On picture 5.1 in on, results from analysis measurement effectiveness digital signage content at MP Mart on the *empathy dimension* shows that the digital content is included in the very effective scale range with an average score of 3.69. Which means that the digital signage content at MP Mart is able to provide interesting information and messages to potential customers.

**b. Persuasion Dimension**

Questions about the dimensions of *persuasion* aim to find out whether digital signage content can be an enhancement to something brands so that capable interesting consumers to try and buy a product. In this study, there are three questions represented from the *persuasion dimension*. Based on the results of consumer perceptions of the *Persuasion dimension* :

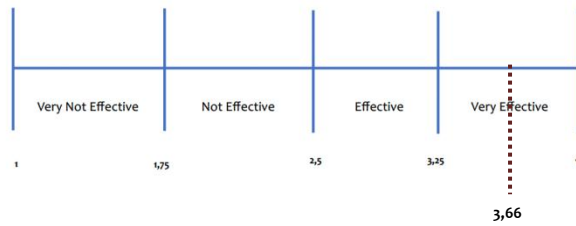
**Table 5. Persuasion Average Score**

| Attribute          | Weight | Persuasion 1          |                                | Persuasion 2          |                                | Persuasion 3          |                                |
|--------------------|--------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|
|                    |        | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents |
| Very Effective     | 4      | 257                   | 1028                           | 272                   | 1088                           | 287                   | 1148                           |
| Effective          | 3      | 140                   | 420                            | 121                   | 363                            | 103                   | 309                            |
| Not effective      | 2      | 3                     | 6                              | 7                     | 14                             | 10                    | 20                             |
| Very Not Effective | 1      | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              |
| Total              |        | 400                   | 1454                           | 400                   | 1465                           | 400                   | 1477                           |
| Average            |        | 3.64                  |                                | 3.66                  |                                | 3.69                  |                                |
| 3.66               |        |                       |                                |                       |                                |                       |                                |

Source : processed by the author, 2023

Knowing the results of calculating the average score from *Persuasion 1, 2, and 3*, a score of 3.66 is obtained when explained through the range of rating scales as follows:

Figure 4 Persuasion Dimension Assessment Scale



Source : processed by the author, 2023

Judging from the scale range of the effectiveness of digital signage content at MP Mart, the *Persuasion dimension* is in the Very Effective category. On picture 4, results from analysis measurement effectiveness digital signage content at MP Mart on the dimension of *persuasion* shows that digital content is included in category effective with score average 3.66. Which It means digital signage content at MP Mart is able to have a positive impact on consumers' desire to use the services provided by the company.

c. **Impact Dimension**

Questions about the *Impact dimension* aim to find out what is the impact of content and the extent of consumer knowledge of products that are made of content. The *Impact dimension* in this study is represented by three questions. Based on the results of consumer perceptions of the *Impact dimension* :

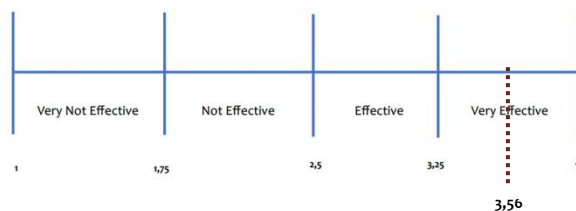
Table 6. Average Impact Score

| Attribute          | Weight | Impact 1              |                                | Impact 2              |                                | Impact 3              |                                |
|--------------------|--------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|
|                    |        | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents |
| Very Effective     | 4      | 253                   | 1012                           | 197                   | 788                            | 226                   | 904                            |
| Effective          | 3      | 147                   | 441                            | 209                   | 609                            | 174                   | 522                            |
| Not effective      | 2      | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              |
| Very Not Effective | 1      | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              |
| Total              |        | 400                   | 1420                           | 400                   | 1397                           | 400                   | 1426                           |
| Average            |        | 3.63                  |                                | 3.49                  |                                | 3.56                  |                                |
|                    |        | 3.56                  |                                |                       |                                |                       |                                |

Source : processed by the author, 2023

Knowing the results of calculating the average score from *Impact 1, 2 and 3*, a score of 3.56 is obtained, when explained through the range of rating scales as follows:

Figure 5. Impact Dimension Rating Scale



Source : processed by the author, 2023

Judging from the scale range of the effectiveness of digital signage content at MP Mart, the *Impact dimension* is in the Very Effective category.

On picture 5 in on, results from analysis measurement effectiveness digital signage content at MP Mart on dimensions *impacts* show that content the including into categories effective with score average 3.56. Which It means content the Enough stand out and provide knowledge about the products displayed in the content.

**d. Communication Dimension**

Questions about the dimensions of communication aim to find out whetherable contentgiveinformationWhichclearAndcapablecommunicate the messagewithGoodtoconsumer.Communication dimensiononstudyThis is represented by four questions.Based on the results of consumer perceptions of the dimensions of Communication :

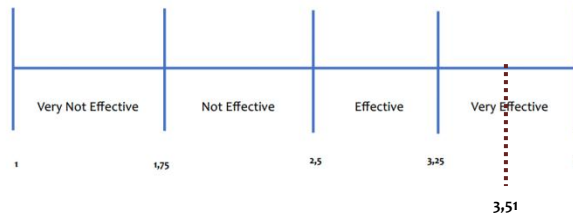
**Table 7 Average Communication Score**

| Attribute          | Weight | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents | Number of Respondents | Weight x Number of Respondents |
|--------------------|--------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|
|                    |        | Communications 1      |                                | Communications 2      |                                | Communications 3      |                                | Communications 4      |                                |
| Very Effective     | 4      | 208                   | 832                            | 185                   | 740                            | 173                   | 692                            | 297                   | 1188                           |
| Effective          | 3      | 189                   | 567                            | 203                   | 609                            | 221                   | 663                            | 94                    | 282                            |
| Not effective      | 2      | 3                     | 6                              | 12                    | 24                             | 6                     | 12                             | 9                     | 18                             |
| Very Not Effective | 1      | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              | 0                     | 0                              |
| Total              |        | 400                   | 1405                           | 400                   | 1373                           | 400                   | 1488                           | 400                   | 400                            |
| Average            |        | 3.51                  |                                | 3.43                  |                                | 3.41                  |                                | 3.72                  |                                |
| 3.51               |        |                       |                                |                       |                                |                       |                                |                       |                                |

Source : processed by the author, 2023

Knowing the results of calculating the average score from Communication 1, 2, 3, and 4, a score of 3.51 is obtained when explained through the range of rating scales as follows:

**Figure 6. Communication Dimension Rating Scale**



Source : processed by the author, 2023

Judging from the scale range of the effectiveness of digital signage content at MP Mart, the Communication dimension is in the Very Effective category.

On picture 6 in on, results from analysis measurement effectiveness digital signage content at MP Mart on the communication dimension shows that the content is included in category effective with score average 3.51. Which It means content the able to convey the information well to potential customers.

**EPIC RATE**

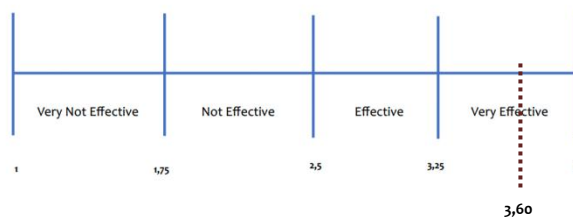
The EPIC rate can be calculated based on the average results between Empathy, Persuasion, Impact and Communication as follows:

$$EPIC\ RATE = (XE + XP + XI + XC) / 4$$

$$= (3.69 + 3.66 + 3.56 + 3.51) / 4 = 3.60$$

Judging from the scale range, according to consumer perceptions, digital signage content at MP Mart is in the Very Effective category.

**Figure 7 Rating Scale of the EPIC Method**



Source : processed by the author, 2023

After analyzing each EPIC dimension and obtaining the results, the next step is to find the average EPIC

Rate. The four dimensions are added to get the average value to get the *EPIC Rate*. The calculation results for each *EPIC dimension* are as follows:

**Table 8 Results EPIC score**

| EPIC Model            | Score | Information    |
|-----------------------|-------|----------------|
| <i>Empathy</i>        | 3.69  | Very effective |
| <i>Persuasion</i>     | 3.66  | Very effective |
| <i>impact</i>         | 3.56  | Very effective |
| <i>Communications</i> | 3.51  | Very effective |

Source: Results Processing Data, 2023

Based on the calculation above, the result of the *EPIC Rate* is 3.60 which, when included in the rating scale, is included in the very effective category. This illustrates that the digital signage content at MP Mart is very high effective in attracting consumers' attention, influencing consumer.

**Qualitative analysis**

a. Message Concept

Based on the analysis and research that has been done, it can be concluded that to design information media in the form of environmental graphic design, such as *wayfinding* and *signage*, the function is to inform, direct or guide visitors to be able to shop at MP Mart.

b. Creative Concept

The chosen theme is modern yet simple, matching the colors of MP Mart and the purpose of wayfinding and signage, namely, to provide clear information to potential customers. The functionality aspect is viewed from readability, clarity, and others, the system aspect includes the effectiveness in placement, and the material application aspect includes choosing a good signage material to last a long time.

c. Media Concept

i) Main Concept

- a. *Identification Sign* provides information on an area to visitors.
- b. *Directional Sign* serves to provide directions to visitors.
- c. *Interpretive Sign* serves to provide information such as area plans.
- d. *Operational Sign* provides information in the form of operating hours.
- e. *Regulatory Sign* provides information in the form of a ban on an area.
- f. *Warning Sign* warns visitors such as the "high radiation hazard."

ii) Supporting Media

a. Social media

Using Instagram social media as a promotional medium which will later contain MP Mart services, operational schedules, commemoration of certain days such as religious holidays, and information about MP Mart product promotions.

b. Merchandise

*Merchandise* design includes media pens, *totebags*, *notebooks* and calendars. Pens, *totebags*, *notebooks* will be distributed when the batara noon hospital holds health seminars or large meetings while calendars will be distributed to visitors at the end of each year, calendars are an effective marketing tool because calendars are displayed on visitors' desks or living rooms for a full year.

c. Brochure

Brochures containing information regarding service info, promotional programs held, and brochures will be placed at the information desk and will usually be taken by visitors.

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