

# Developing Digital Magazine on Coffee Industry Information in Covid-19 Pandemic for Tourism Enhancement

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**Abstract**— The corona virus represents an unprecedented joint supply and demand shock to the Indonesian coffee sector and tourism. Since the increase of Covid-19 pandemic, there was not any tourist that visited an island called Belitung, and it caused to the falling down of coffee industry in the island. This paper describes how to develop a tool that focus on coffee industry in attracting tourists and enhance the economics in Belitung island. To supporting the program, it is important to create digital magazine. This research uses WDLC model that consists of 5 stages such as requirement analysis, conceptual design, mock up and prototype, production and launch. Subjects of the research are people who use digital magazine. This research has been conducting and the researchers try to present the the system design. Research findings show that digital magazine is the most feasible model to be implemented since the Covid-19 pandemic.

**Keywords**—coffee, tourism, Covid-19, web-based, digital magazine, development

## I. INTRODUCTION

Many institution and people involved in coffee industry in Indonesia. They are embedded within a global value chain for coffee like farmers, plantation estates, coffee collectors in villages, traders, coffee shops and others. The economic wellbeing of these various individual actors, and the ability of the industry to contribute to the development of a national green economy, therefore, requires heightens sensitivity to the changing dynamics occurring within this global value chain.[1]

Indonesian people have long known the culture of drinking coffee in their daily lives since Dutch era. One of them is the people of Belitung Island, Bangka Belitung Province, in this case in Manggar City in East Belitung Regency and Tanjung Pandan City in Belitung Regency. It is a common sight to find residents in these two cities seen to be filled with coffee shops scattered along the road. [2] Now, the existence of coffee shops in the two regions has developed and has also changed its function. Coffee shops in Belitung are now one vehicle that brings together various ages, ethnic backgrounds, religions and professions. As a public space, the coffee shop serves as an information center, a medium of socialization, and a center of life for the people of Belitung. In the coffee shop, the people of Belitung can sit all day, chat, and talk about what concerns them, so tourists do. [3]

Many tourist attractions are available in Belitung Island. Without information, it is difficult to find some good spots. As for reference, there is Manggar District. It is actually the home of coffee shops. You may expect lots of coffee shops in the streets. These shops have different business hours. That means you can always find an open shop every day. All these shops feature warmth ambiance and friendly customers. It is an opportunity to make new friends! Though, don't forget to carry much money.[4]

The novel corona virus represents an unprecedented joint supply and demand shock to the global coffee sector. Since March 2020, when Covid-19 was declared a global pandemic by the World Health Organization (WHO), coffee prices have been highly volatile mainly as a result of supply chain disruptions. An initial spike was followed by a persistent decrease in price that may foreshadow the likely cooling of coffee demand as a result of the recession that is now affecting many coffee importing countries. At the end of June, the ICO composite indicator fell below the 100 US-cents/lb. Hence, the Covid-19 pandemic constitutes an enormous additional challenge to the global coffee sector that has experienced a prolonged period of low prices. [5] For delivering information about coffee during the pandemic, it is supposed to use digital magazine that can be read anywhere and anytime in obeying the health protocol.

A magazine is a periodical publication which is printed in gloss-coated and matte paper or electronically published (sometimes referred to as an online magazine). Magazines are published regularly with many kind of content. They are generally financed by advertising, by a purchase price, by prepaid subscriptions, or a combination of the three. [6]

Magazine is called an online magazine if it published on the Internet, and can be accessed using computer or mobile devices. Some online magazines may refer to themselves as "electronic magazines" or "e-magazines" to reflect their readership demographics or to capture alternative terms and spellings in online searches. [7] While an electronic magazine is a more specialized term appropriately used for small magazines and newsletters distributed by any electronic method, for example, by electronic mail.

Digital magazines are easier than physical magazines for several reasons. Publisher do not need to care about the quality of printing, expenses to deliver the magazine, and warehouse

for keeping before delivering. Online magazines are read online. They aren't formatted for a tablet and they can't be bought in an app store. They are available through a magazine subscription website, where the user can view an issue of a magazine - one that is linear and periodic, has pages and a regular frequency, and can be viewed in HTML on any desktop or mobile device at any time. There's nothing to download. Publishers of online magazines usually generate their revenue through subscribers and may also take advertising.[8]

Nonetheless, the technology landscape for setting up, distributing, and getting paid for digital magazine issue is important. [9] Digital magazines take advantage of digital publishing technology. Unlike print, it allows adding of animations and links within the magazine to make it more informative or aesthetically better. The cost of printing is eliminated and the publishing price is greatly reduced, so most digital magazines do not require the same amount of advertising that print magazines do.

With all of the benefits of digital publishing over print, it's no surprise that e-magazines have become so popular. Unfortunately, many people are still clueless on what digital magazine really is and what forms it's available in, they're left stuck at a time when the landscape is fast evolving [8]

The prior research was conducted by Dora Santos Silva [9]. The digital environment is rich in opportunities for digital magazines. However, if on the one hand, we are witnessing a growing number of these applications and a hopeful enthusiasm surrounding the presence on the iPad, the truth is that, on the other hand, the publishing industry has yet to develop a viable business model to sustain the costs of a digital magazine. The result is, of course, the poor exploitation of digital tools and the excessive use of replicas of printed versions of journals. Nevertheless, it is possible to conclude that these new formats of magazines have real advantages over traditional. Readers are just beginning to realize that. And their expectations are growing.

Since the City of Manggar has named itself as the City of 1001 Coffee Shops in 2009, there are many visitors in this city [4]. The number of tourists who come also increases every year, both domestic and foreign tourists. Data from the Central Bureau of Statistics of the Province of Bangka Belitung said that the number of domestic and international tourist visits to the province increased every year.

This paper describes how to develop a digital magazine. The magazine can be read easily on computer, notebook, and smartphone. It will be more comfortable for all the users anywhere and anytime when they have available time. The advantages of digital magazine will be able to: (1) deliver news about coffee plantation and industry online, (2) attract tourists to visit Belitung since the unique coffee taste, and (3) assist the regional economic growth.

## II. METHOD

This general design process is illustrated in Fig. 1. It is a combination between Web Based Development Life Cycle (WDLC) according to Brinck et al. [10] and Producing Custom Magazine according to Nenad Senic [11]. The methods can be done parallelly, because the task are very

different. In the figure, evaluation of WDLC appears below, on its own, to indicate that similar types of evaluation can occur at different stages of design. Evaluation helps to ensure that the design is on track to satisfy the goals of the design. Evaluation may include usability evaluation, client review of the design, quality assurance, or technical feasibility evaluation. Evaluation is part of what makes usability pervasive, but usability is also fully integrated into every stage of the processing time.

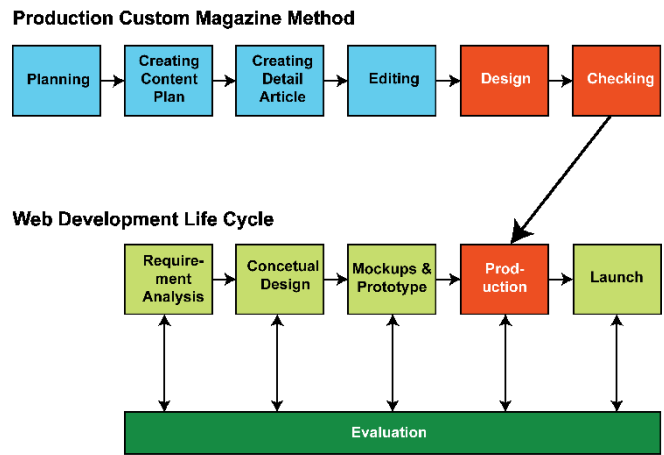


Fig. 1. Website Development Life Cycle [6]

Though visual design of web tends to be a art from science, but it use the general approach design principles. According to Brinck et al. [6], web development includes five stages, that are: (1) **Requirement Analysis**. The objectives of web application are determined, in order solving the organization problems. The target audience, platforms, user goals, business goals are defined. The purpose and audience desire influence the style of website. The website should be identified as communicative media, (2) **Conceptual Design**. This conceptual design is a concept development of a website, and must be considered from all aspects. Creating design should be consider as a simple and common design. Design describes how functionality is the application works, and methods such as class diagram, task analysis, and information architecture used at this stage. The functional design could reduce the failed possibility in application, (3) **Mock ups and Prototypes**. The purpose of this stage is creating visible sample to be evaluated it before production stage. Visual representation that sometimes is called mock ups and navigation structure that is popular with prototype are made in this stage. Mock ups can be made as a manual drawing or illustration using graphics software. The main elements are determined is the identity of the web, that can be a logo, names, colours, and others that have been known well by the user. A menu and an entirely new icon as the user interface must be given to the user, because the user is more familiar with the old interface. Training is required, and is necessary that the use of a new interface must be easy and economical one, (4) **Production**. At this stage the final product is made, including text, fill in graphs, and all. Evaluation includes quality assurance, user testing, and field testing, (5) **Launch**. The product is launched and ready for information publication. Furthermore, the website is maintained and evaluated. The design process repeats from the beginning, and (6) **Evaluation**. At every stage an evaluation is always

carried out for get responses from various parties, so that it is consideration in improving the website.

The developing magazine using Production Custom Magazine Method can be described as follow: (1) **Planning**. This will help developer manages the production in timely fashion, so he does not miss the agreed-upon deadline for sending the magazine to the printers and the target distribution date. The latter should be the starting point. The plan is created going backward from that date, taking into consideration any obstacles you can anticipate that may prolong the process, (2) **Content plan**. Create an editor's table of content for all pages, including the front and back covers. It plans the content of a magazine issue, and then for monitoring the process of production. Make sure that the plan is confirmed by all members of the editorial board, (3) **Detailed plan**. Once developer confirmed the overall content plan, he will want to follow with a detailed plan for every story that will be published. Considerations here include the content of a story, type of article, create modular content, create of design mock-up, instruction and author, (4) **Editing**. In many cases, an article will need to be returned to its author to make corrections and add information that you, as an editor, believe is missing. For every story, make sure to edit the headline, lead, body, picture, and picture caption, (5) **Design**. Make sure the design of every spread is logical and works with the design of the magazine as a whole scenes whole content, and (6) **Checking**. Before editor can send a new issue of the custom magazine to print, take one final detailed look at it. He usually take printed pages in the relaxed environment, and he reads the magazine from cover to cover again to make sure there are no mistakes.

This research is conducting, and the discussion below including stages Requirement Analysis, Conceptual Design, and Mock ups/Prototypes.

### III. RESULTS AND DISCUSSION

During creating an web based application, the development used website development method which was abbreviated with WDLC (Website Development Life Cycle), that consisted of 5 stages as requirement analysis, conceptual design, mock ups and prototype, production, launch, and evaluation.

#### A. Requirement analysis

The object of the research was magazine website and digital magazine issue, and the research locations were conducted in Belitung. Respondents consist of people, tourists and regional government of Belitung.

Analyzing collected data using the analytical descriptive method, and then the research findings was interpreted. Analyzing and data processing carried out in six stages including gather, prepare, read, create code, and analyze. [12]. The data was collected from interviews and questionnaires using: (1) Open-ended questions that were used to find useful information, (2) Open-ended interviews for collecting depth information from respondents. Table 1 shows the questions that should be answered by the respondents.

**Table 1. Questionnaires used in the first stage**

1. The culture of drinking coffee in their daily lives since Dutch era. Is there any specific interesting of Belitung coffee?
2. Is coffee an attracting subject for tourism?
3. What kind of media can be used to introduce the special coffee to audience during Covid-19 pandemic?
4. What kind of design do you expect? - What kind of logo is used? - What type of font (type, size, color) is used? - What color should be used? (Pantone, RGB, etc.) - What elements (slogans, taglines, illustrations, etc.) need to be used to support the content?
5. What features are needed in the main online information (for example: Home, About, Archives, Contact)?
6. What kind of media are expected to be used (for example desktop computers, notebooks, smartphones) and what are the reasons for their use?

Data was collected from 17 respondents of people, tourists and regional government of Belitung. After processing the data using NVivo [13] qualitative data processing software, the website design might be designed. In answering the questions in Table 1, majority of the respondents stated the following statements in Table 2.

**Table 2. Research findings after data processing**

1. The interesting of Belitung coffee is planted near the sea. The coffee bean is called Excelsa, the taste is kind of Robista. Many coffee shops can be found everywhere in the city.
2. Coffee is an attracting subject for tourists in Belitung because the specific taste is unique.
3. Mobile phone is the most interesting device that can be used to introduce the special coffee to audience during Covid-19 pandemic?
4. Most of the respondents expected: - Using the view of beach with white sands - Times New Roman with readable size and color - Color mode using RGB is suitable for digital media - Illustrations and video need to be used to support the content
5. Most of the respondents expected all features that can be used to support the information.
6. Most respondents said that computer, notebook and smartphone could be used to facilitate many kinds of users.

#### B. Conceptual Desitgn

Based on the research findings and discussion of the researchers and clients, the human resources information system would be formed as described in Table 3.

**Table 3. The concept of digital magazine**

Object	Description
User	Coffee industries, coffee drinkers, tourists
Module	Module: <ul style="list-style-type: none"> <li>- About Coffee</li> <li>- Editorial Team</li> <li>- News</li> <li>- Archives</li> <li>- Contact</li> </ul>
Application	Web based application that runs on computer, notebook and smartphone

The application concept was a simple web-based that is responsive to be accessed on variety of mobile phones. It is on page web site with pull down menu in Archives. One menu contained of individual articles, and the other contained the whole articles in an issue. User can found all issues of the magazine and downloaded the individual and whole content of issue.

### C. Mock-ups and prototypes

The third stage, developing a mock-up including navigation structure and visual design of the web-based application. First, it established lateral thought processes, helping to break down the navigation structure that was usually embedded in traditional approaches to course delivery. Second, it could result in an overview based on quite abstract design, which in turn generate fresh implementation. Third, it provided a visual design for identifying relationships between the components. Navigation structure was essential for establishing the style of thinking conducive to designing for the characteristics of web-based application shown in Fig 2. After creating navigation structure it was important to provide with visual design.

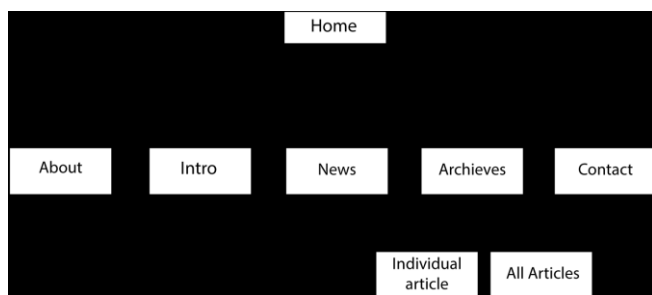


Fig. 2. Navigation structure

A good web design can perform and attract to the users well, and it always meets their needs. The web visitors looking for information, entertainment, some type of interaction, or to transact with the organization business. Each page of the website needs to have a clear purpose, and to fulfill a specific need for the website users in the most effective way possible [14]. Fig. 3 shows the web page design.

Designing magazine should present the design of photo located in the page area. Designer decided to placed photos in 3 kinds of ways as can be seen in Fig. 4. Many designers argue that clean grid lines is an important part of web design. There are a few simple reasons for this: grids make the designs cleaner, more efficient and easier to adapt. [15] Grids bring organization not only to the design, but to the process of creating design. Creating the digital magazine, its important to create a strong grid and if the dates, times, images and colors all change, your basic designs will feel related.

Visual design principles gives the design should have alignment, repetition, contrast, proximity, and balance [16][17]. Good design, much like anything, starts with understanding the basics: (1) **Alignment** creates a sharper, more ordered design. The elements that are aligned can create a visual connection with each other. It tightens the design and eliminates the haphazard, messy effect which comes when items are placed randomly, (2) **Repetition** strengthens a design by tying together individual elements. It helps to create association and consistency, (3) **Contrast** can emphasize or highlight key elements within your design. This doesn't necessarily have to be colors either. It can be achieved with fonts (classic/contemporary), lines (thick/thin) and shapes (big/small), just to name a few, (4) **Proximity** helps organizing similar elements together into a group, and proximity for creating a relationship between the elements. It also provides a focal point and can give the reader and idea of where they should start and finish reading, and (5) **Balance** provides stability and structure to a design. It's the weight distributed in the design by the placement of your elements. The elements don't necessarily need to be of the same size. Balance can be created by placing a large and several small elements side by side. Balance can be achieved in 2 ways, either Symmetrical or Asymmetrical.



Fig. 3. Visual design of the web page

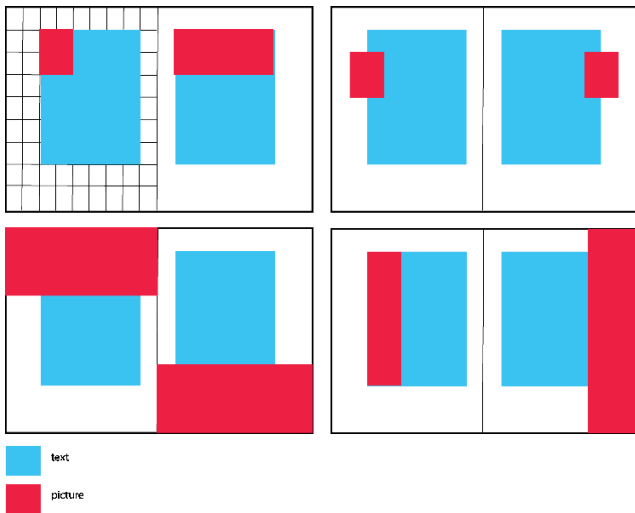


Fig. 4. Design of magazine page

#### D. Production

The fourth stage, produced the web as a responsive web page, that the design and development could meet to the user's behavior and environment that suitable with the platform, display and orientation. [18] The web page could be displayed on any resolution of device, as can be found in Fig. 5.

A pdf file that contains of articles was produced from the design and layout processing, and also pdf format of magazine that contained all the articles. Fig. 6 shows the magazine that contains all articles.

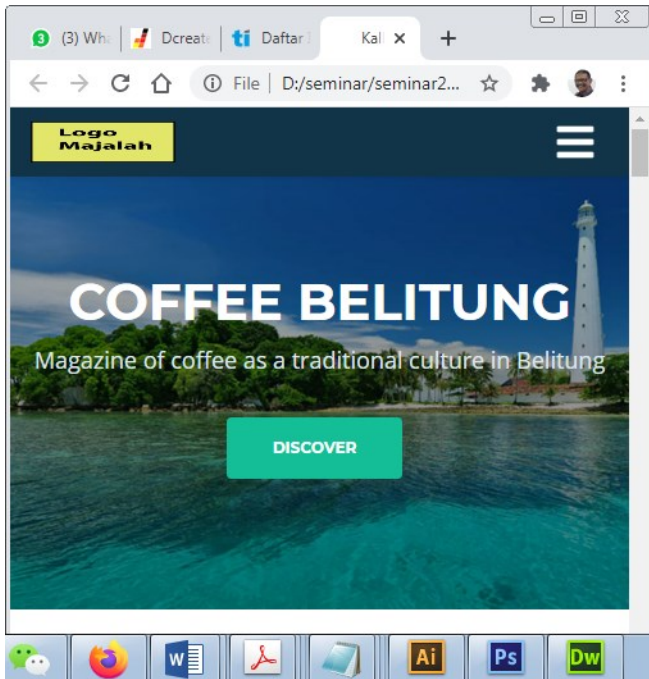


Fig. 5. Visual design of the web page

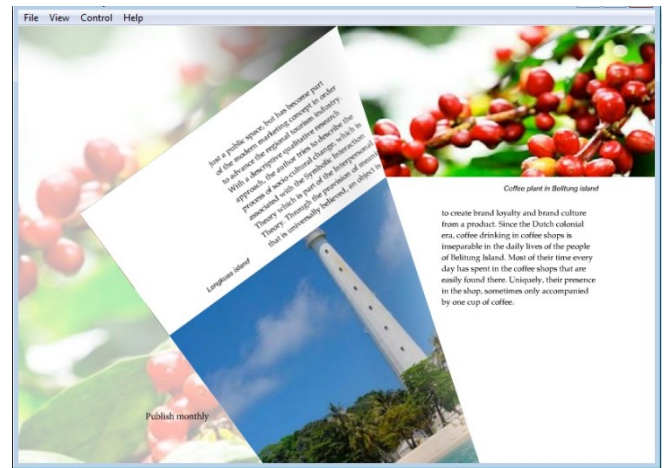


Fig. 6. Visual design digital magazine

#### IV. LIMITATION OF RESEARCH

The research and development that consists of 5 stages is still in progress in the fourth stage. The testing of product has not been conducted, because there are limited activities during Covid-19 pandemic.

#### V. CONCLUSION

Based on the objectives and the results obtained in this initial study, it can be concluded as follows: (1) The information derived from the initial research was used as a guideline for developing digital magazine; (2) The Developing digital magazine was carried using the Website Development Life Cycle of according to Brinck et al. and combined with Producing Custom Magazine according to Senic.

For future work, the production of digital magazine needs to be implemented in the next research, and evaluated to find whether the application is worth to be used.

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