Artikel

E-Marketing Applications Based On Virtual Reality Using Sostac Planning Method On Sales Property

Philip Kristy Wijaya[1], Aditiya Hermawan[2]

[1]*Universitas Buddhi Dharma, Teknik Informatika, Banten, Indonesia*
[2]*Universitas Buddhi Dharma, Teknik Informatika, Banten, Indonesia*

A B S T R A C T

Increased demand for property in Indonesian society, opening up a great opportunity for entrepreneurs to start a business in the property sector. The large number of new entrepreneurs, opening up many different ways of offering attractive products and promos that bring the impact of significant sales decline for those who can not compete. One such problem-solving proposal is to analyze current conditions and create new, powerful goals and strategies to implement. The methods that can serve as guidelines in the analysis and planning of the marketing strategy are SOSTAC (Situation Analysis, Objectives Setting, Strategy, Tactics, Action and Control). Based on the results of SOSTAC analysis and suggestions the way that can be done is to build E-Marketing with media websites that can be easily reached by the public and a marketing tool for marketing executive. On the website created a Virtual Reality feature that can display the form of building to consumers to increase consumer confidence in purchasing units. Based on testing and evaluation by consumers a new marketing strategy plan is worth trying and applied in marketing strategy.

I. INTRODUCTION

Along with the increasing number of population in Indonesia, the more number of entrepreneurs or investors in the country and abroad who glance at the sector of property development in Indonesia. These business actors (or so-called developers) offer a variety of offers. Starting from a varied price, strategic location and also the shape and appearance of buildings made in such a way as to win the hearts of potential buyers.

Obtained survey data from the website www.bi.go.id, that the index of commercial property supply in Indonesia in the third quarter of 2016 reached 106.65 or increased by 0.48% which is higher than the previous quarter which only reached 0.28 %. Demand for commercial property during the quarter was recorded at 128.20, which increased by 0.46% from the previous quarter's 0.28%. If seen in the fourth quarter, the index of commercial property supply in Indonesia in 2016 reached 107.29 or increased by 0.60%

which is higher than the previous quarter which only reached 0.48%. Demand for commercial property during the quarter was recorded at 128.71, an increase of 0.39% over the previous quarter.

Virtual Reality consists of two words, namely virtual and reality which means virtual and reality. Virtual Reality is a technology that can interact with an environment simulated by a computer. In reality, virtual reality is used to describe the three-dimensional environment generated by computers and can interact with []). In other words, the user can view the creation of an environment without necessarily coming directly to the environment. With this technology, bringing a new way for developers to market their products for sale. Potential buyers can preview the concept and model of the property product so they feel interested in making a purchase.

In addition to the presence of Virtual Reality technology, the property developers must also be careful in choosing and using the method of planning to determine the marketing strategy. One of the methods that can be used is SOSTAC (Situation Analysis, Objective Setting, Strategy Formulation, Tatics, Action, and Control). SOSTAC is a model of planning framework that can be easily followed, yet it is able to identify all the major things that must be done to achieve the goal (Chaffey, 2009: 418). Using this method, property developers can develop and plan their marketing strategies more closely, effectively and efficiently.

With the use of Virtual Reality technology and planning with SOSTAC method is expected to increase public awareness about the brand of the products sold, so as to improve the rating of the company in the middle of the community or amid competition with other developers, which will indirectly affect the arrival of prospective customers and increase in the number of product sales so as to achieve the expected target.

II.   Method

SOSTAC Method

SOSTAC is a model planning framework that can be easily followed, but is able to identify all the main things that must be done to achieve the goal. The stages in this method are as follows:

a.   Situation Analysis

Situation analysis is divided into 3, namely: Demand Analysis, Competitor Analysis and SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats). At the Demand Analysis stage, the authors will distribute questionnaires to the respondents (the general public and consumers) about brand awareness, the marketing strategy weakness of the developer and the demand of the respondents.

At Competitor Analysis stage, the author will take some other competitor website website and make comparisons (advantages and disadvantages).

At the SWOT Analysis stage, the author will analyze strategic issues on Strengths, Weaknesses, Opportunities and Threats. After obtaining the data, it will be further developed into the most influential (internal and external) issues of combinations.

b.   Objectives Setting

Objectives are key elements of the process strategy model. Companies need a foundation to help to achieve the desired goals. One of the guides we can use to create specific, measurable and realistic goals is 5S (Sell, Serve, Speak, Save and Sizzle).

c.   Strategy Formulation

The strategy to be created should focus on the goals that have been made before. The e-marketing strategy is a long-term phase that defines the developments needed to achieve the stated goals.

d.   Tactics

Once the strategy has been developed as part of e-marketing planning, tactics must be implemented to achieve these strategies.

e. Action

It is the final component in e-marketing planning that describes the activities to be performed, in accordance with the strategies and tactics, ready to be applied in carrying out the plan. At this stage the author will make Use Case Diagrams, Activity Diagrams, Sequence Diagrams and Entity Relationship Diagram. For programming, the author will use Unity and Google Sketch Up applications. In the preparation of the database, the author will use XAMPP with MySQL programming language and PHP.

f. Control

This stage aims to monitor the views of customers and opinions. The control stage is done by periodically evaluating whether the e-marketing application that has been implemented has reached the stated goal yet. One method that can be done to run the control function is to perform blackbox testing. In addition, the authors will also conduct surveys to some respondents (the general public and consumers) about the assessment of the applications that have been made, the next will be known advantages and disadvantages of the application to become a reference stage of further development.

Table 1 SOSTAC Dimensions

Phase	Planning	Answer the Question
S	Situation	Where the current position
O	Objectives	At the position and condition where desired
S	Strategy	How to reach that position (in general)
T	Tactics	How do we achieve that (the goal) (in more detail and technically)
A	Action	What specific actions are required in tactics per step and how to achieve that
C	Control	How do we know can get there

III. RESULT

The data used by the researchers through the survey by distributing questionnaires to 15 respondents, then in the analysis and made a plan based on SOSTAC is divided into several sections:

1. Situation Analysis

Table 2 Brand Awareness of Company Properties

No	Information	Number of Respondents
1	Already Knowing Property	3 people
2	Not Knowing Property	12 people
	TOTAL Responden	**15** people

Table 3 Weakness of Promotion Strategy PT. Ligamas Sejahtera

No	Weakness	Number of Respondents
1	The lack of promos is interesting	3 people
2	Can not see condition of building being sold (no sample house)	3 people
3	Less promotion on main roads	2 people
4	No website	1 people
5	Not familiar on the internet	1 people
6	Lack of quality service from sales	1 people

Tabel 4 Permintaan Strategi Promosi Pengembang Properti Saat Ini

No	Respondent's Request	Number of Respondents
1	There is a display of building products being sold	7 people
2	Easy to contact sales executive (easy to get information about product)	6 people
3	Have a project or company website	5 people
4	Provide great discount promos	4 people
5	Provide interesting promos	3 people
6	Ease of making payments	3 people
7	Can be searched on the internet	2 people
8	Easy to administer administratively	2 people
9	Installed on the property search site	1 people
10	Provide true and honest information	1 people
11	It's on the top list on google	1 people

User Requirement

User Requirement uses the data that has been obtained from the distribution of questionnaires to 15 respondents about what is desired by the respondent to manufacture the application to be built.

Table 5 *User Requirement*

No	I want this app to be
1	It has an interesting look
2	Displays complete product information
3	Can display the virtual reality product building
4	Can display videos and images (both perspectives and original images)
5	There is a feature to download product flyer
6	Have a menu to display the latest promotions and news
7	Can provide information on latest property developments
8	Have a menu to contact the sales executive
9	There is a backsound on the website
10	Can display the project master plan
11	Can display a map of the project location
12	Has a menu that can display job openings

2. Objectives Setting and Strategy Formulation

The following table Objectives (Objectives Setting) and Strategy Formulation (Strategy Formulation) promotional activities to be performed on the design of this application:

Tabel 6 Objectives Setting dan Strategy Formulation

No	Objectives Setting	Strategy Formulation
1	Create a website media that can be accessed online by the community anywhere, anytime and by anyone.	a. Displays information about the product in detail and clear. b. Create a website with an attractive look and match the product theme. c. Create a website that can display information about the company and the project so that it can be better known by the community. d. Displays product videos and images and project environment.
2	Create a media that can display the form of building products sold, so that consumers have a first view of the product to be purchased that can increase the attractiveness of arrival even make a purchase.	a. Creating a virtual reality feature that can be used by the community and display the building form of the product and can be displayed on the company website.
3	Increase and extend the reach of consumer brand awareness.	a. Maximize the function of listing developers listed on top property search sites. b. Routinely share links from reputable property sites through social media or other web pages.
4	Create a media that can deliver promos and latest news about the product, so the deployment process becomes faster, wide range and right on target.	a. Displays promos, news and articles on the website page, so it can be accessed online and by people who are looking for property. b. Regularly distribute promo links and news contained in the pages of the website through social media or other website pages.
5	Improve the quality of good service and professional.	a. Create a medium that can be used by people to ask questions, ask for more information or provide criticism and suggestions. b. Create a media that can display information to improve the quality of service in terms of internal company.

3. Tactics

The following table Tactics (Tactics) promotional activities to be performed on the

design of this application based on points on Objectives Setting and Strategy Formulation:

Table 7 Tactics

Formulation	Tactics

1a	1. On the website will be made menu, namely:
	a. "Product", the menu used to display all information about the marketed product (in this paper there are two sub-menus, namely: "Housing" and "Business Area"). The information submitted will be elaborated in detail, including:
	  i. Image Perspective.
	  ii. Image Original Product (if the unit already exists that ready stock).
	  iii. Basic information about the product (building type, land area, building area, electric power, water type, house face and carport).
	  iv. Product building specifications.
	  v. Views of buildings in Virtual Reality.
	b. "Facility", in this menu will display detail information (pictures, basic information) about all facilities that exist in the project of the product. This menu has sub-menus, they are:
	  i. "Sport Club" which contains information on: swimming pool, fitness center and table tennis.
	  ii. "Jogging Track".
	  iii. "Boom Gate" which contains information about the security of 24 hours are: CCTV and security officers.

1b	1. Website will be made with simple-modern concept. Views of the website will be more decorated with green color, in accordance with the theme of products that are beautiful and united with nature.
1c	1. Will be made menu "About Us", on this menu will be displayed detailed information about company profile.
1d	1. In the "Products" menu, each sub-menu will display the project image (perspective and original) which can be changed by clicking left or right (slides). 2. In the "Products" menu, each sub-menu will display a video (if any)
	taken link from youtube (on the right side of the page). 3. In the "Facilities" menu, will display a picture of the entire facility and the view of the project environment.

2a	1. On each of the product type pages (from the sub-menu: "Housing" and "Business Area"), a "Virtual Reality View" button will be created which, when clicked, opens a new window displaying the virtual reality product display . The public can view the product building form by running the existing camera view by using the following keyboard functions:
	  i. W key, to advance.
	  ii. D key, to swipe right.
	  iii. A Button, to swipe left.
	  iv. S button, to back off.
	  v. Space Bar, to jump.
	  vi. Esc + key click anywhere, to exit virtual reality view window.
	  vii. Move the mouse to the right, to turn the camera to the right.
	  viii. Move the mouse to the left, to turn the camera to the left.

3a	1. At this time, the company has an account listing on the property search site, namely: rumah123.com. 2. In each listing page, will be displayed a company website link that can be clicked by the public to open the company website.
3b	1. Each sales executive is required to have at least 3 social media accounts that will be used to share posting links from each listing page. Share this done at least 2 days. 2. Each sales executive is required to have 1 email account that will be used to share all linked listings to the entire database of consumer props. Share this done at least 3 days (with bcc to marketing administration).

4a	1. On the website, a "Home" menu will be created which will display:
	a. Images that can be switched automatically to the right (can also be clicked in the right direction and towards left), as for image material to be loaded about:
	  i. Products sold and / or up-to-date.
	  ii. Ongoing promotion
	  iii. Latest news.
	b. Recent News List and Promo (accompanied by images and short news content). People can see the complete news content by clicking on the news list. A news list view

|			
	will be displayed on four pages on the homepage, with box drawings and short news content underneath. c. List of Articles, which will be displayed in the form of a list-list under the News and Promo columns. To view the contents of the article in full, people can click on the list. The list of articles will include articles on property information, property developments and tips on choosing good properties.	5a	1. On the website, will be made menu "Contact Us". This menu will be used by the community to contact the project's sales executive to inquire further information / request to be contacted. This menu can also be used by the community to submit critiques and suggestions. This menu will display a map of the project location (google maps). In this menu there will be several fields, including: a. Name. b. Address. c. Mobile phone number. d. Email. 2. After the community sends a message in the "Contact Us" menu, the message will be sent to Marketing Administration email, which will be sent to the sales executive (as per the order of acceptance)
4b	1. Each sales executive is required to have at least 3 social media accounts that will be used to share post links from each news page, promo or article. Share this done at least 2 days. 2. Each sales executive is required to have 1 email account that will be used to share the link to the entire database of consumer props. This share must be done every time there is a new promo. Share news and articles viewed from the importance of the content of news and articles (with bcc to marketing administration).	5b	1. On the website, will be made menu "Career". This menu will list jobs available at PT. Ligamas Sejahtera (accompanied by job description, requirements and how to apply).

4. Action
Use Case Diagram
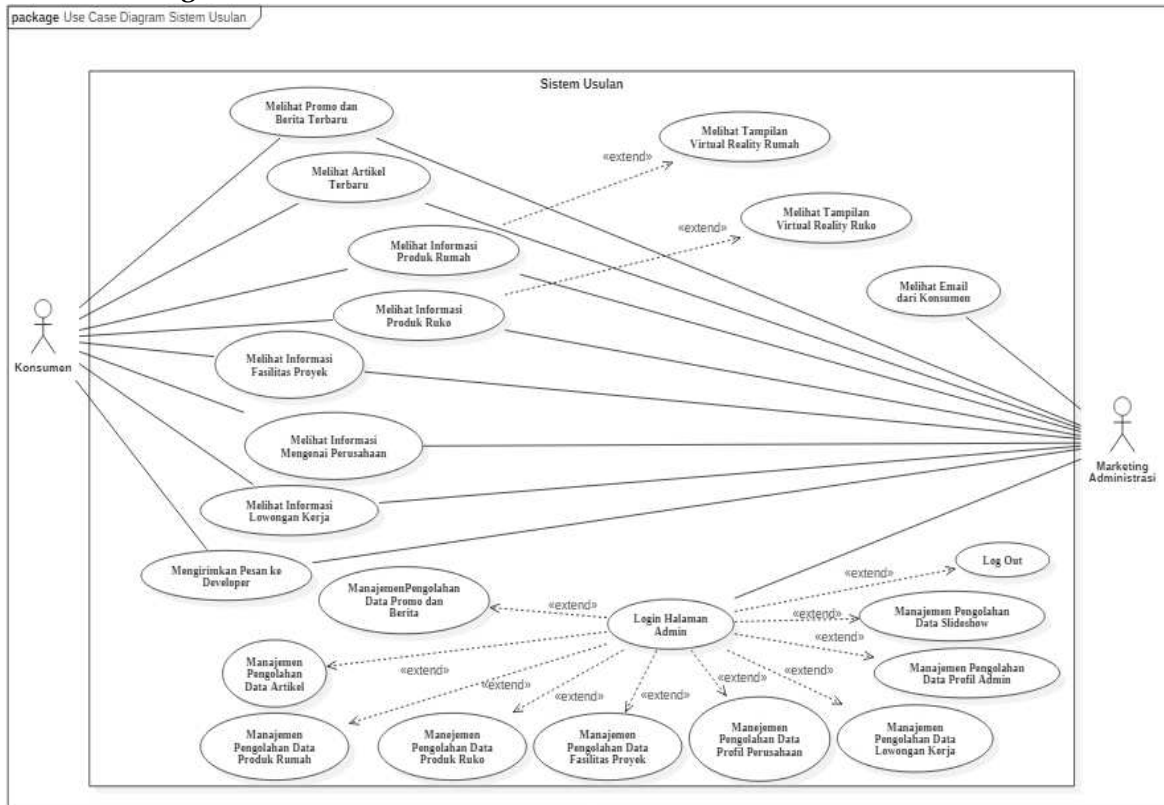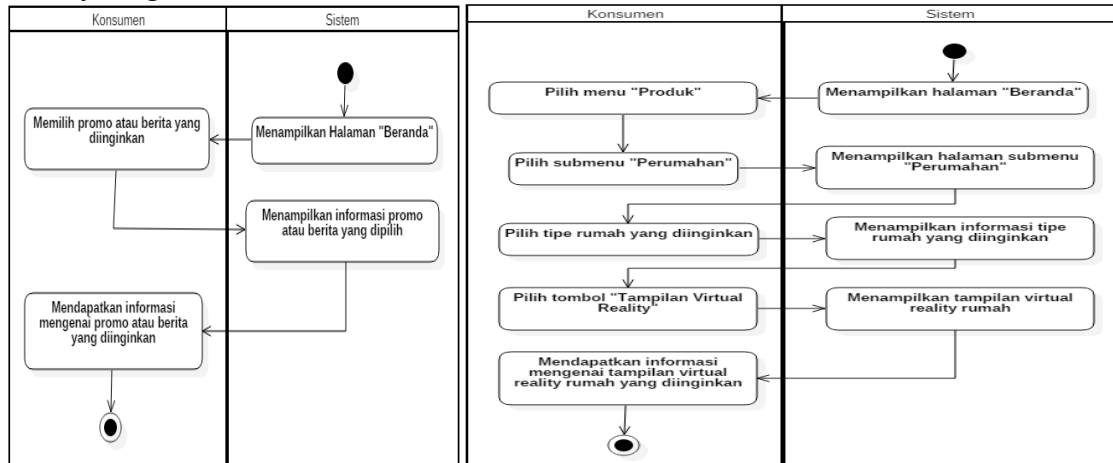

Figure 1 *Use Case Diagram*

Activity Diagram:

Figure 2 *Activity Diagram* Show Promo and View Virtual Reality View House

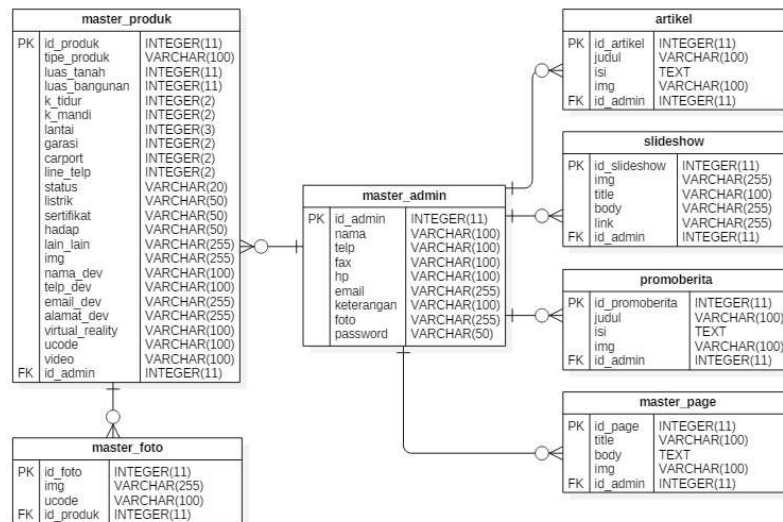## Design Database (*Entity Relationship Diagram*)

Figure 3 Desain Database (*Entity Relationship Diagram*)
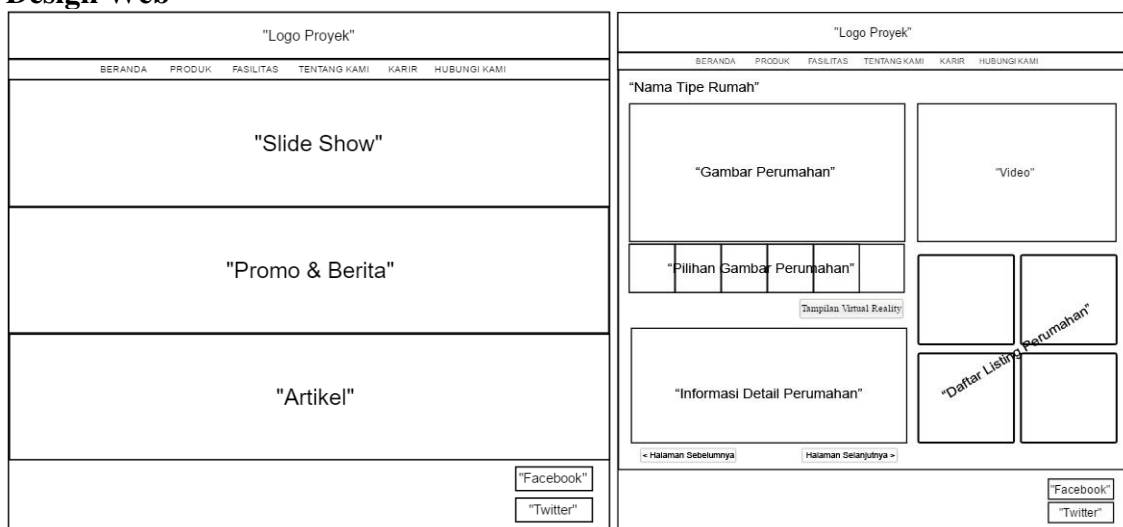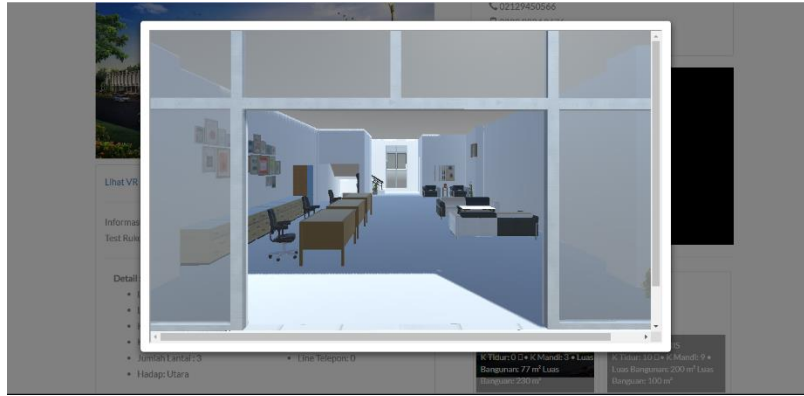
Design Web

Figure 4 Homepage "Home and Virtual Reality Type Homes"

Figure 5 Website Pageviews "Virtual Reality"

5. Control

At this stage, the authors will perform 2 (two) control process of application implementation made, that is Black Box Testing and Application Appraisal Survey which will be done by distributing questioner to some respondents. Here is the process:

1. Black Box Testing

Figure 8 Hasil Pengujian *Black Box*

No	Test Description	Test Procedure	Data Entry	Evaluasi Criteria	
				Y	N
1	Home	Go to Website, Click Home Page	-	√	
2	Product - Housing	Go to Website, Click Product, Click Housing	-	√	
3	Products - Business Area	Go to Website, Click Product, Business Area	-	√	
4	Facilities	Go to Website, Click Facility,	-	√	
7	About Us	Go to Website, Click About Us	-	√	
9	Contact Us	Go to Website, Click Contact Us	-	√	

2. Application Assessment Questionnaire

Based on the results of the questionnaire that has been done to 12 respondents and after the calculation of the percentage of each category of assessment, obtained data as follows:

a. Strongly agree : 39,4%
b. Agree : 52,3%
c. Less Agree : 7,2%
d. Disagree : 1,1%

Based on these results can be drawn a conclusion that the application made can be well received by the public and prospective consumers as well as get a positive response to the functions contained in the application and has achieved the goal of making this application.

IV. Conclusion

In accordance with the discussion and evaluation as well as some testing through black box testing and questionnaires that have been given to several respondents and after the analysis and design of marketing strategies using SOSTAC method, it can be taken some conclusions as follows:

1. With this application, can facilitate the public in finding products sold, along with complete product information.
2. This app is a great place to display the latest promos, news and articles that can be seen by the public or potential customers, so as to increase the desire to contact marketing executive.
3. With this application, can help consumers to see the form of building products that will be purchased later, so that consumers have guidelines about the house or shop that will occupy later. This greatly increases consumer confidence in making the decision to make a purchase.

References

Abidin, Riswan "Pengertian *Virtual Reality* dan Perbedaannya Dengan *Augmented Reality*", 2015. [Online] Tersedia: https://teknojurnal.com/pengertian-*virtual-reality*-dan-perbedaanya-dengan-*augmented-reality*/, accessed 30 April 2017

Arief, M. Rudianto. Pemrograman Web Dinamis Menggunakan Php dan Mysql. Yogyakarta: ANDI, 2011.

Arifin, Hasnul. Merakit Sendiri Komputer Tahan Banting Dengan Modal 1 Jutaan. Yogyakarta: Mediakom, 2010.

AS., Ranang, and Hetty D. Agustin. Teknik Foto Virtual Reality Panduan Praktis Dengan Pano Worx. Yogyakarta: Graha Ilmu, 2007.

Azis, M. Farid. 2005. Object Oriented Programming PHP 5. Jakarta: PT. Elex Media Komputindo.

Chaffey, Dave, Fiona Ellis-Chadwick, Richard Mayer, dan Kevin Johnston. *Internet marketing: strategy, implementation and practice*. Pearson Education, 2009.

Hendrayudi. VB 2008 Untuk Berbagai Keperluan Pemrograman. Jakarta: PT. Elex Media Komputindo, 2009.

Indrajani. Database Design. Jakarta: PT Elex Media Komputindo, 2015.

Manullang, Rio. Mudah Membuat Desain 3D dengan Google SketchUp. Jakarta: PT. Elex Media Komputindo, 2017.

Matakoin, Ella. E-Commerce Pengertian E-Marketing Pemasaran Online dalam Internet. Desember 26 2016. accessed Mei 10, 2017. http://www.matakoin.com/2016/12/pengertian-e-marketing-adalah.html.

Nugroho, Adi. Perancangan Dan Implementasi Sistem Basis Data. Yogyakarta: CV. ANDI OFFSET, 2011.

Oktavian, Diar Puji. Menjadi Programmer Jempolan Menggunakan PHP. Yogyakarta: Mediakom, 2009.

Padeli. Cara Mudah Membangun Informasi Dengan Website. Serang: Dinas Pendidikan Provinsi Banten, 2014

Perangin Angin, Frans S. 2012. Scribd. Februari 22. accessed Mei 5, 2017. https://www.scribd.com/doc/82383199/Beberapa-pengertian-perumahan.

Plus, Property. Strategi Membangun Bisnis Developer Property. Jakarta Selatan: Ufuk Press, 2010.

Pranata, Baskara Arya. Mudah Membuat Game dan Potensi Finansialnya dengan Unity 3D. Jakarta: PT. Elex Media Komputindo, 2015.

Pratama, I Putu Agus Eka. E-Commerce, E-Business Dan Mobile Commerce. Bandung: Informatika Bandung, 2015.

—. 2014. Komputer & Masyarakat. Bandung: Informatika Bandung.

Prisgunanto, Ilham. Komunikasi Pemasaran : Strategi dan Taktik. Bogor: Ghalia Indonesia, 2006

Rahardja, Untung. Siapa Saja Bisa Membuat Website dengan CSS dan HTML. Yogyakarta: Andi, 2009

Sanjaya, Ade. Pengertian Developer Definisi Hak Kewajiban Tanggung Jawab Pelaku Usaha Perumahan. Oktober 15 2015. accessed Mei 5, 2017. http://www.landasanteori.com/2015/10/pengertian-developer-definisi-hak.html.

Simarmata, Janner. Rekayasa Perangkat Lunak. Yogyakarta: CV. ANDI OFFSET, 2010

Stauer, Jonathan. Unity Virtual Reality Projects. Birmingham: Packt Publishing Ltd, 2015

Sunyoto, Danang. Dasar-Dasar Manajemen Pemasaran . Yogyakarta: CAPS, 2012

Supardi, Yuniar. Semua Bisa Menjadi Programmer Java. Jakarta: PT. Elex Media Komputindo, 2010.

Zaki, Ali. Animasi Karakter dengan Blender dan Unity. Jakarta: PT. Elex Media Komputindo, 2016

BIOGRAPHY

Philip Kristy Wijaya - Graduated in Informatics Engineering Study Program, 2017, working at PT. Ligamas Sejahtera Hunian as Marketing Admnistrasi.

Aditiya Hermawan - Graduated from Strata I in 2010 at Informatics Engineering Program, and graduated Strata II (S2) in 2013 at Computer Science. Currently active as a Permanent Lecturer in Informatics Engineering Program, Buddhi Dharma University.