

The Development of Collaborative Marketing Website for Digital Learning Materials

Triyanna Widiyaningtyas*, Aji Prasetya Wibawa, Utomo Pujiyanto

Electrical Engineering–Universitas Negeri Malang

Jl. Semarang 5 Malang, Indonesia 65145. E-mail: triyannaw.ft@um.ac.id*

Abstract: Website is a collection of related pages and used to display information in the form of text, images, sounds, or a combination of everything that is static or dynamic. Website can be used as a marketing tool. This article discusses collaborative website development for marketing digital teaching materials. The development of this website is expected to increase the usefulness of student thesis products in the form of teaching materials. Finally this development study finds that the website can be implemented for selling the academics products.

Key Words: collaborative marketing, website, digital learning materials

Abstrak: *Website* adalah kumpulan halaman terkait dan digunakan untuk menampilkan informasi dalam bentuk teks, gambar, suara, atau kombinasi dari segala sesuatu yang statis atau dinamis. *Website* dapat digunakan sebagai alat pemasaran. Artikel ini membahas pengembangan *website* kolaboratif untuk pemasaran materi pengajaran digital. Pengembangan *website* ini diharapkan dapat meningkatkan kegunaan produk tesis mahasiswa dalam bentuk bahan ajar. Akhirnya studi pengembangan ini menemukan bahwa *website* dapat diimplementasikan untuk menjual produk akademik.

Kata kunci: pemasaran kolaboratif, laman, materi pembelajaran digital

INTRODUCTION

Academic product is a product as a result of a personal or group research or other academic activities (Olson, 1994; Snellenberger et al., 2004; Urciuoli, 2005). The product have several types including proposal, paper, video, and so forth. In carrying out educational activities, civitas academica also produces a scientific product, such as student thesis, lecturer's research articles, learning video, and some other products that can be used as teaching and learning resources.

The products are usually printed and then stored in the department's library (Rath, Kumar, Kumar & Ku, 2017). It shows that the thesis has been completed and accepted by the department. In fact, these are rarely seen and only stacked in libraries as well as other products. Therefore, it is necessary to develop a mechanism of product utilization in terms of science and financial improvement.

A digital bookstore is a portal to transact, publicize and educate a scientific product digitally (Hjarvad &

Helles, 2015). In its development, many digital bookstores are web. One such digital store is Nulisbuku.com. This site is a publisher website as well as an online bookstore. On this website, the author can publish his work and sell it himself. Other sites such as Buku kita.com and Bukabuku.com is a website describing the information of marketed products.

The discussion of this article is the development of a Collaborative Digital Content Marketing website. Collaborative Marketing is a company major activity by establishing relationships between several parties who try to achieve the same goals together (Erragcha & Romdhane, 2014). Executing this marketing technique without the aid of technology is almost impossible (Stettler, Zemp, & Steffen, 2016). Marketing is one of the activities of companies that deal directly with consumers. Through collaborative marketing, consumers are expected to participate in the business process system developed.

As an initial project of teaching materials will focus on teaching materials for SMK with ICT Expertise. The marketing strategy used is collaborative market-

ing, involving various parties involved in product development, among others. Participants include, among others, majoring as content assignment, student, alumni of lecturers and publishers. The digital bookshop website will display a book collection at the same time as a means to sell the product.

The service is expected to facilitate the search for information in the collection of information objects such as documents, images, and databases in digital format quickly, precisely, and accurately. This is possible to achieve because digital libraries can be enjoyed by users anywhere and anytime without the time limit set by library organization policy.

METHOD

Rapid application development (RAD) or rapid prototyping is a software development process model that belongs to incremental (multilevel) techniques (Ferreira & Simoes, 2016). RAD emphasizes short and fast development cycles. A short time is an important limitation for this model. Rapid application development uses iterative (repeatable) methods in developing systems in which the working model (model works) of the system is constructed at the beginning of the development stage in order to define the user's needs and then be removed (Jain, 2015; Srinivasan & Agila, 2014). Working models are used sometimes as the basis for the design and implementation of the final system. Figure 1 shows the RAD cycle has three main stages, namely requirements planning, RAD design workshop, and implementation.

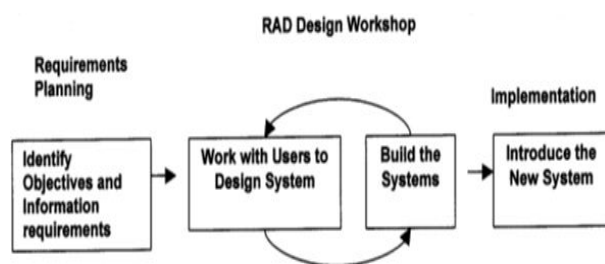


Figure 1. RAD Cycle

At the Requirements Planning stage, the implementing team conducted meetings to identify the objectives of the application or system, make preparations, the things required, and look for the issues related to the system to be designed. Preparations undertaken at this stage included administrative preparation, and team preparation to organize the implemen-

tation and programming for creating better performance.

In the RAD Design Workshop, design process, determining the features, making systems and applications, and improvements were conducted if there is still a mismatch in the design are implemented. Web will be developed in smartphones apps or apps models. One of the criteria of a good website is a dynamic website. Dynamic Web is a website that provides content or content that is always changing at any time (Featherman, Thatcher, Wright, & Zimmer, 2011). Unlike static websites that are not linked to the database, dynamic web content can be directly modified as per the client's wish. This process was done repeatedly until the design is ready to be implemented.

The last step was implementation. After the design of the system was created has been approved by all implementing teams, at this stage the implementer develops the design into a website. After the website was completed, then the process of testing the website was to check whether there is an error or not before applied to a system. The team responded and approved the system created. Tests were performed on system workflows that have been designed and created. The first stage of testing, aimed at minimizing program size, checking and completing program features. The next stage was testing on potential users who aim to find out if there are suggestions and criticism from potential users of the program. If there is still a discrepancy, it would be redesigned. Redesign was done as a response to user demand, as well as a form of collaborative marketing at the end of the development stage.

RESULT AND DISCUSSION

The repeated RAD design workshop process generates a collaborative marketing website with various features. These features are the functions of registration, login, home menu, product account and upload.

Registration must be done by the user when first accessing the website. This page will ask the user to write some attribute of identity among others, first name, surname, username, password, email address, phone number and status. Especially for the status divided into two, namely the UM and non-UM citizens. This distinction is due to the greater grant access rights for that will be permitted to UM citizens as collaborative marketers. After registering the user

can do many things such as buying books, selling books and sharing books through other applications.

Login is done by using pop up widget on web page. When successfully logged in, the login menu will change to the user name. If not, the user will again be asked to enter a username and password. If the user forgets the password or their username, they can contact the admin to reset the password and send the info to the user’s email. After going through the

login process, the user will enter the Home Menu, Figure 2. In this menu, the user will be given some display cover book, where the cover–in which the book cover can be seen, purchased, or downloaded. In the menu view, there are several sub menus such as the latest, popular, and premium. Especially on the premium menu, then the books displayed are paid books.

Account menu (Figure 3) displays user information Good name information, email, user descriptions, number of uploaded books, number of downloaded books, and number of read books.

The product menu (Figure 4) displays the description and reviews of the marketed books. Descriptions are also some pages of the contents of the book. Reviews contain previous user/reader comments regarding the content of the book. In this menu there is also a sub menu download and share.

The last feature is the Upload Menu. This menu is to upload books that have been created by the user, UM citizens. Users can upload multiple snippets or pages for example, description, cover design, whole book, and users can determine the price of the book. Every activity done in this website will get points.

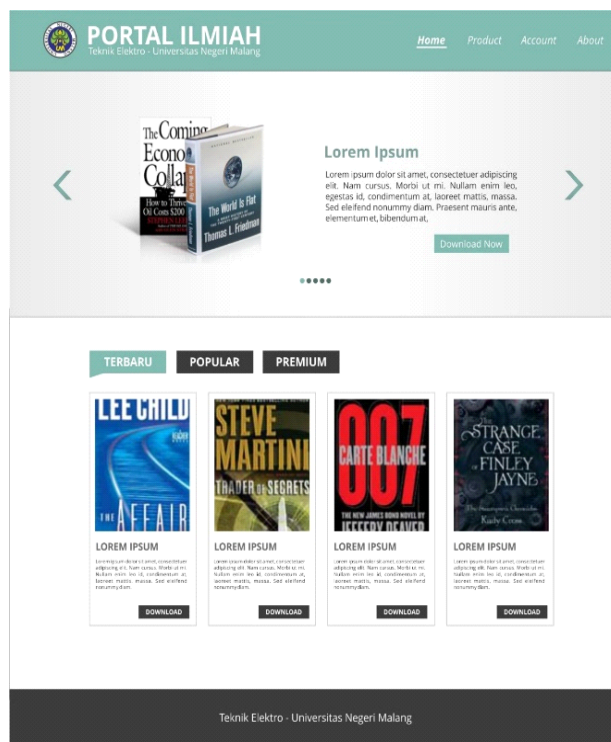


Figure 2. Home Menu

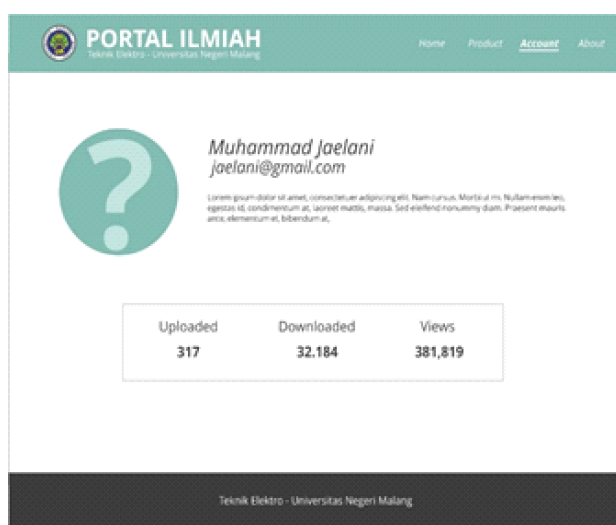


Figure 3. Account Menu

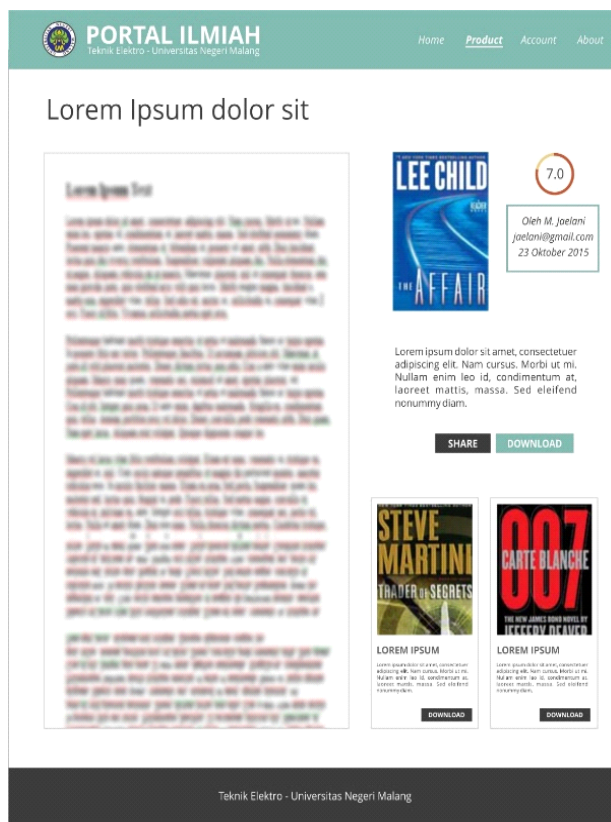


Figure 4. Product Menu

Table 1. Black-Box Test Result

No.	Features	Validity (%)
1	Registration	100
2	Login	100
3	Home menu	100
4	Account menu	100
5	Menu Product	100
6	Menu Upload	100

Points earned can be used to download and share books.

White Box and Black Box test have been done to test the validity of website developed. Table 1 shows that the features developed are 100% valid. So it can be concluded that the website developed can be used. In the future, further testing is required using technology acceptance model or TAM (Alharbi & Drew, 2014; Padilla-meléndez, Aguila-obra, & Garrido-moreno, 2013; Rauniar, Rawski, Yang, & Johnson, 2014). TAM is used to analyze and understand the factors that affect the acceptance of the use of computer technology.

CONCLUSION

This research aims to develop a website as a marketing tool of academic products. The rapid application development method is used to develop the website. After following several iterative process and test, the website is considered as ready to implement. For further development, another assessment metric such as TAM should be used to gain deeper analysis.

ACKNOWLEDGMENT

This research is funded by Faculty of Engineering under the 2017 institutional grant. The authors also thank to the department electrical engineering students and alumni for providing requirement and specification analysis for the website development.

REFERENCES

Alharbi, S., & Drew, S. (2014). Using the Technology Acceptance Model in Understanding Academics' Behavioural Intention to Use Learning Management Systems. *International Journal of Advanced Computer Science and Applications(IJACSA)*, 5(1), 143–155. <https://doi.org/10.14569/IJACSA.2014.050120>.

Erragcha, N., & Romdhane, R. (2014). New Faces of Marketing In The Era of The Web/ : From Marketing 1.0 To Marketing 3.0. *Journal of Research in Marketing*, 2(2), 137–142. <https://doi.org/10.17722/jorm.v2i2.46.g20>

Featherman, M., Thatcher, J., Wright, R. T., & Zimmer, J. C. (2011). the Web 2.0 Phenomenon and Hci Research. *AIS Transactions on Human-Computer Interaction*, 3(1), 1–25. <https://doi.org/10.5121/ijfcst.2014.4403>.

Ferreira, D. R., & Simoes, P. (2016). A Rule-based Approach to the Implementation of Business Processes in Normalized Systems. In *2016 IEEE 18th Conference on Business Informatics (CBI)* (pp. 218–227).

Hjarvad, S., & Helles, R. (2015). Going digital: Changing the game of Danish publishing. *Northern Lights: Film & Media Studies Yearbook*, 13(1), 49–64. <https://doi.org/10.1386/nl.13.49>

Jain, R. (2015). A Fuzzy Logic Based Approach for Selecting the Software Development Methodologies Based on Factors Affecting the Development Strategies. *European Journal of Advances in Engineering and Technology*, 2(7), 70–75.

Olson, J. E. (1994). Institutional and Technical Constraints on Faculty Gross Productivity in American Doctoral Universities. *Olson, J. E. (1994) 'Institutional and Technical Constraints on Faculty Gross Productivity in American Doctoral Universities', Research in Higher Education*, 35(5), Pp. 549–567. *Research in Higher Education*, 35(5), 549–567.

Padilla-meléndez, A., Aguila-obra, A. R. Del, & Garrido-moreno, A. (2013). Perceived playfulness , gender differences and technology acceptance model in a blended learning scenario model in a blended learning scenario. *Computers & Education*, 63(April), 306–317. <https://doi.org/10.1016/j.compedu.2012.12.014>.

Rath, P. S., Kumar, A., Kumar, A., & Ku, G (2017). E-Library Management System. *International Journal of Engineering Science and Computing*, 7(4), 9998–10000. <https://doi.org/10.1109/RFID-TA.2016.7750755>.

Rauniar, R., Rawski, G, Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6–30. <https://doi.org/10.1108/JEIM-04-2012-0011>

Snellenberger, J. M., Quick, D. H., Davis, I. T., Tidwell, J. P., Brien, J. O., Haynes, R. M., ... Stanford, T. G (2004). Enabling the U . S . Engineering Workforce to Per-

- form/ : Recognizing the Importance of Industrial En-gagement In Professional Graduate Engineering Education. In *2004 American Society for Engineering Education Annual Conference & Exposition Copyright* (p. 9.5273.1-9.5273.3).
- Srinivasan, J., & Agila, R. (2014). Software development life cycle model to build software applications with usability. *International Journal of Innovative Research in Advanced Engineering (IJIRAE)*, 1(4), 211–214.
- Stettler, J., Zemp, M., & Steffen, A. (2016). Smart marketing of an alpine destination—a conceptual framework. In *TTRA International Conference*.
- Urciuoli, B. (2005). The language of higher education assessment: Legislative concerns in a global context. *Global Legal Studies*, 12(1), 183–204. <https://doi.org/10.1353/gls.2005.0012>