

Design and Implementation of Web-Based Hospital Information Systems for Patient Data and Service Management in Healthcare Facilities

Dr. Liam O'Connor^{1*}, Dr. Emma Walsh¹

¹Department of Health Informatics, St. James's Hospital, Dublin, Ireland

Abstract:

The purpose of this research is to create a website-based information system design for Small and Medium Enterprises (SMEs) to help them facilitate their business in the field of technology. This research was conducted using descriptive qualitative methods with literature study based on various studies that has been done, and used object-oriented approaches as system builder, the development method used prototype method. The results obtained from this study are an information system design that can facilitate SMEs in terms of sales and promotion. The conclusion is that the information system website could be able to help SMEs to develop their business in terms of promotion and sales so that they can compete with large companies. The ability of information systems can add new opportunities or opportunities for SMEs to expand their market share at affordable costs

Keyword: *SMEs, Market, Website-based.*

INTRODUCTION

Small and Medium Enterprises (SMEs) contribute more than 95 percent of the business population and more than 60 percent of employment (OECD, 2000). In addition, they play an important role in job creation and sustainable economic growth. The need to improve the competitive environment of SMEs is important because they have become a source of economic development (Llave, 2017). Information systems are important for SMEs because they help them manage their customers and promote their products. It is because customers are one of the most important aspects of SMEs, information systems can help SMEs to maintain positive relationships with their customers (Boekelder, 2018)

SMEs are one of the active factors in the market economy. Their economic, social, and political importance are the basic of the modern economy. In addition, economic shows a strong complimentary relationship between large companies and SMEs (Lucian, et al., 2018). Though many government programs, SMEs have been allocated various information and communication technology funds to help them adopt information technology. But there is still no availability of containers to promote their products (Akman and Dagdeviren, 2018). By using information systems, especially the use of the internet as a virtual platform is an advantage for SMEs to get involved in business competition in this modern era. The invention of the internet has changed many aspects of life by reducing the barriers to accessing information and ease of communication on the World Wide Web. The effect of this change is already clear in business and commerce (Habyba, et al., 2018). Advances in information technology have influenced people's daily activities, many of the activities currently carried out online. People can easily buy products by accessing websites (Ahmad et al., 2017). Consumers are armed with useful information packages when they go shopping thanks to the internet. The government alleviates the use of the internet by legalizing online business activities, by enacting laws and imposing provisions needed for security purposes. The authorities of most countries have now opened their doors to online business using websites (Shrafat, 2018). With the development of trade, more and more companies have been selling online on their website. In general, the cost of switching customers from sales websites is

low. For customers, going from one website to another that offers similar products or services is easy, just by clicking the mouse (Song et al., 2019). The internet has broken the barriers of distance in the global market. Today, there are many businesses that do online sales using websites. By using a website is one from of utilization of information and communication technology that has the potential to spread information easily and quickly and its scope is so broad (Hosseini et al., 2019). This research obtained is create a website base design for SMEs and facilitate the report about the order on page of admin in order in field.

Therefore, the purpose of this research is to create a website-based information system design for SMEs to help them facilitate their business in the field of technology. This research was conducted using descriptive qualitative methods with literature study based on various studies that has been done, and used object-oriented approaches as system builder, the development method used prototype method.

RESEARCH METHOD

This research used descriptive method to provide an overview of how to design a website-based information system. For the data collection, researchers used literature study to assist in this research. The first stage carried out in making this information system design is to conduct an analysis and identification of all needs related to the features and contents needed after that make the design of the information system design. The web-based sales information system was built using an object-oriented approach method, and the development method using the prototype method.

RESEARCH RESULTS AND DISCUSSION

Based on the reference study conducted in the making of this design, the first step is to conduct an analysis and identification of all needs related to the features and content needed (Patanisiri and Krairit, 2019).

Use Case Diagram

Use case diagram is a function that systems provide as units exchanging messages between units or actors (Effendi and Noviansyah, 2018). The use case diagram of the information system is shown in Figure 1.

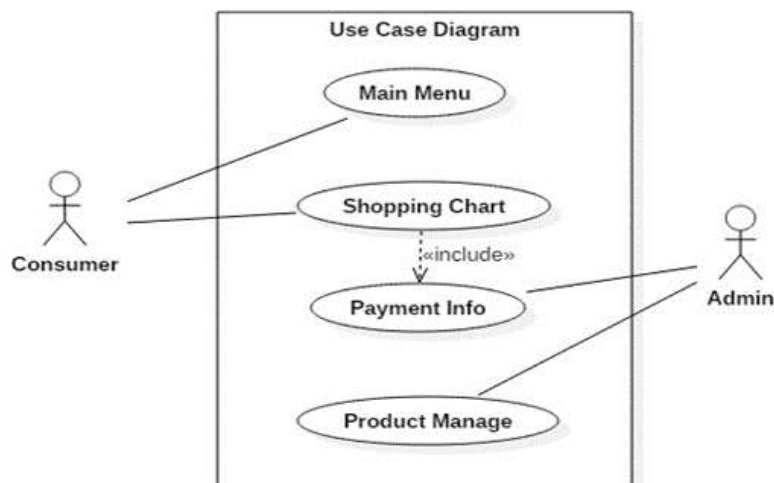


Figure 1. Use Case Diagram

The following description of each actor from the use case diagram:

1. Consumer

To have purchase the product on the website of sales information system, consumer must register first and then login for the next of purchasing step.

2. Admin

The system administrator must login first on the website to be able manage the site of sales information system and product manage include to see and process the order who has been paid and shown the product on the main menu are available or out of stock.

3.2. Software Design Requirements

Software requirements needed for the website of Sales Information System are split into two, include for server and clients. Server requirements : OS : Windows 10, Xampp, Software editor Sublime Text, Database : MySQL. Client requirements: OS : Windows 10, Android, or IOS, Browser Google Chrome or Mozilla Firefox.

Hardware Device Requirements

Hardware requirements for the website of Sales Information System are split into two, include for server and clients. Server requirements : PC device, monitor resolution 1024 x 768, Processor Intel CORE i3, Memory 4GB, HDD 250GB. Client requirements : PC or Mobile Phone, with minimal RAM of 1 GB.

Interface Design

The purpose of the system design is to produce a good system design, because with the right system design it will produce a system that is stable and easily developed in the future. Because if the design is not good it will result in the system being built must be changed in total or the system being built incompatible with the requirements (Abikoye et al., 2019). The use of website as online marketing is easy to be accessed, because the site can be accessed anywhere and anytime through browsing by the internet (Fahmi and Effendi, 2019) (see Figure 2).

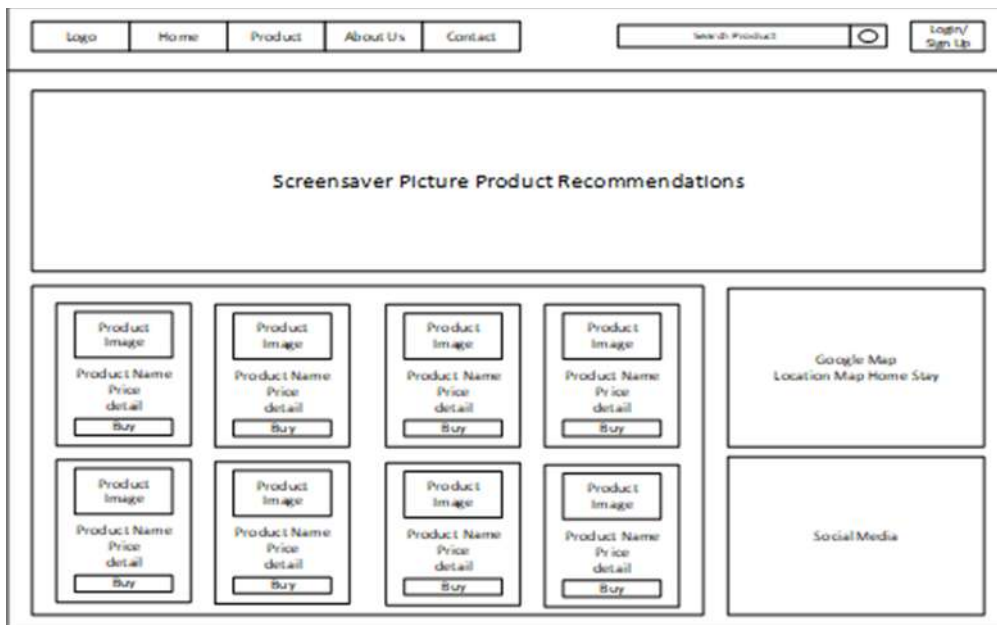


Figure 2. Main Menu Design

Figure 2 explains about the appearance of the main menu page design that serves as the initial display when consumers who is going to buy or see the product view by opening the website of this information system. Consumers can see the product first without having to log in. This display has some navigation that is easily understood and used by users so that it can help users in using this information system. On this page, consumers can search for desired products by writing the product name in the search form, the system will display the product the consumer wants but if you want to buy products that are available, consumers must log in first (see Figure 3).

Figure 3. Sign Up and Login Consumer Design

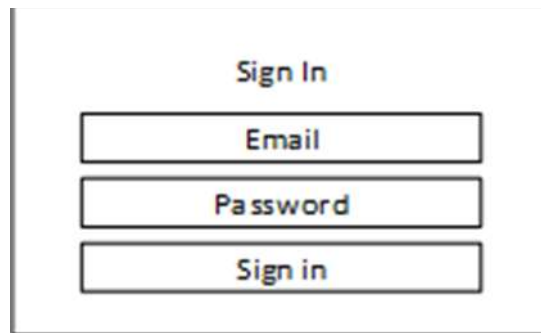
Figure 3 describes the design of the registration and login page for consumers. Consumers who do not have an account to carry out transactions on this information system are required to register first, registration can be done by filling out the form that is already available or if you want to register quickly, you can register using a Facebook or Google account. Consumers who already have an account can log in by entering their registered email and password, if they have logged in then the consumer will be directed to the next page where on that page the consumer can start trading on the information system by using the available features (see Figure 4).

No	Photo	Name Product	Quantity	Price	Sub Total	Delete
1	Image	Chips	2	Rp. 10000	Rp. 20000	Delete
Total					Rp. 20000	
						Pay

Figure 4. Shopping Chart Design

Figure 4 describes the shopping cart menu page design. This page provides information about temporary orders made by consumers before sending to the system to continue the transaction. On this page, consumers can determine which products will be continued to the stages of payment and which products will not be continued to the stages of payment.

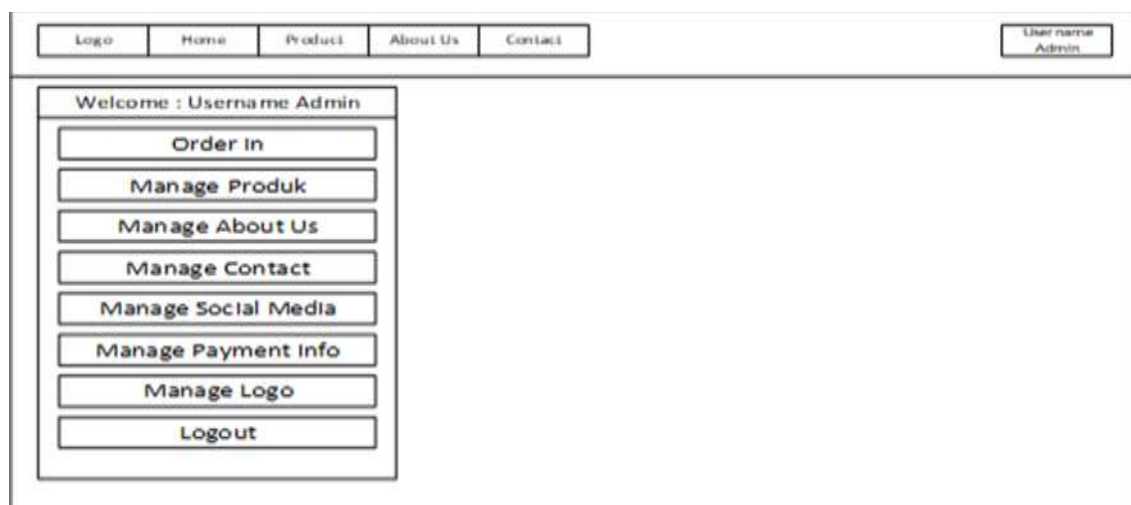
Products that will not proceed to payment or will not be selected can be removed by consumers from shopping carts. Consumers can see how much the total price must be paid on this page so that consumers do not need to think any more about the total price to be paid (see Figure 5).



The image shows a simple login form with a white background and a thin black border. At the top center, the text "Sign In" is displayed. Below it are three vertically stacked rectangular input fields. The first field is labeled "Email", the second "Password", and the third "Sign in".

Figure 5. Admin Login Design

Figure 5 explains about designing the login page for the admin. Not everyone can access this admin page, only the admin who has been given the email and password used to access the information system can login to open the admin main page. The email and password can be changed after logging in if they will be given to the new admin or other needs (see Figure 6).



The image shows a screenshot of an admin dashboard. At the top, there is a navigation bar with buttons for "Logo", "Home", "Product", "About Us", and "Contact". On the right side of the navigation bar, there is a "User name" field containing the text "Admin". Below the navigation bar, there is a main content area. On the left side of this area, there is a "Welcome : Username Admin" message. Below the welcome message is a vertical list of buttons: "Order In", "Manage Produk", "Manage About Us", "Manage Contact", "Manage Social Media", "Manage Payment Info", "Manage Logo", and "Logout".

Figure 6. Admin Main Menu Design

Figure 6 explains the admin main page design. On this page, the admin can manage a variety of activities contained in the information system, the admin can see orders made by consumers in the order in navigation on the left. If you want to add or delete products the admin can go to manage product navigation. Everything about the contents of the information system is managed on this page, when the admin wants to exit this information system, the admin can log out via the logout button.

CONCLUSION

With the website-based sales information system design it is expected to make it easier for Small and Medium Enterprises (SMEs) to market and offer their products. The ability of information systems can add new opportunities or opportunities for SMEs to expand their market share at affordable costs. In addition, the features in this information system are also made as simple as possible to make it easier for consumers and visitors to use the website.

BIBLIOGRAPHY

- Abikoye, O. C., Oyelakun, T. A., Aro, T. O., & Obisesan, R. O. 2019. Design and Implementation of a Personnel Record Management System for a Nigerian University. *System*, 1(1), pp. 65-94.
- Ahmad, D., Ariessanti, H. D., & Awaliyah, K. 2017. Implementation of E-Commerce Website to Increase Online Sales of Case Study of Baby Wise BSD Tangerang. *Aptisi Transactions On Management*, 1(1), pp.11-16.
- Akman, E., & Dagdeviren, M. 2018. Discovering what makes a SME website good for international trade. *Technological and Economic Development of Economy*, 24(3), pp.1063-1079.

- Boekelder, S. 2018. The impact of marketing intelligence on SMEs (Master's thesis, University of Twente).
- Effendi, D., & Noviansyah, B. 2018. Rancang Bangun Sistem Informasi Manajemen Persediaan Barang di Suhuf Kertaseni Nusantara Bandung. *JUPI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)*, 3, pp. 17-23.
- Fahmi, P., & Effendi, D. (2019, November). E-Marketing of Coffee Products. In IOP Conference Series: Materials Science and Engineering (Vol. 662, No. 3, p. 032055). IOP Publishing.
- Habyba, A. N., Djatna, T., & Anggraeni, E. 2018. A System Analysis and Design for SMEs Product Presentation on E-commerce Website based on Kansei Engineering (Case Study: SMEs Products of Ponorogo Regency). In *International Conference on Kansei Engineering & Emotion Research* (pp. 20-29). Springer, Singapore.
- Hosseini, S., Fallon, G., Weerakkody, V., & Sivarajah, U. 2019. Cloud computing utilization and mitigation of informational and marketing barriers of the SMEs from the emerging markets: Evidence from Iran and Turkey. *International Journal of Information Management*, 46, pp.54-69.
- Llave, M. R. (2017). Business intelligence and analytics in small and medium-sized enterprises: A systematic literature review. *Procedia Computer Science*, 121, 194-205.
- Lucian, G., Ema, M., Ioan, M. D., Gheorghe, F., & Andrei, M. 2018. Statistical analysis of performance in SMEs. *CURRENT SCIENCE*, 115(8), pp.1543-1549.
- OECD (2002), OECD Small and Medium Enterprise Outlook, Organisation for Economic Co-operation and Development, Paris.
- Patanasiri, A., & Krairit, D. 2019. A Comparative Study of Consumers' Purchase Intention on Different Internet Platforms. *Mobile Networks and Applications*, 24(1), pp.145-159.
- Shrafat, F. D. 2018. Examining the factors influencing knowledge management system (KMS) adoption in small and medium enterprises SMEs. *Business Process Management Journal*, 24(1), pp.234-265.
- Song, Z., Sun, Y., Wan, J., Huang, L., & Zhu, J. 2019. Smart e-commerce systems: *current status and research challenges*. *Electronic Markets*, 29(2), pp.221-238.