E-Commerce Based Digital Marketing Using Business Model Canvas

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Abstract— The digital era, which is quickly evolving nowadays, necessitates the use of online stores by business owners to compete for as many clients as possible. E-commerce is the process of selling, purchasing, and marketing a product over the internet network. Conventional sales of items that do not maximize the use of promotional media will result in sales declining and many products not being sold. Traditional sales must instantly transition to digital marketing via e-commerce websites using a Content Management System (CMS) so that retailers can have their charm to improve product sales. The benefit of this research is to make online sales utilizing a Content Management System (CMS) to improve business operations and product marketing by employing Search Engine Optimization (SEO) to reduce product marketing expenditures. The Business Model Canvas (BMC) is used to create an online business model. Unified Modeling Language (UML) diagrams, such as Activity Diagrams, Use Case Diagrams, Component Diagrams, and System Sequence Diagrams, are used in the system design. As a result of this research, the e-commerce website will be displayed on the first page of the search site, allowing it to assist shop transaction activities and serve as a promotional medium.

Keywords— E-commerce, Content Management System, Business Model Canvas, Search Engine Optimization.

I. INTRODUCTION

Because of the use of the internet, which leads to cyberspace, rapid advances in information technology appear to control all activities on this planet. To make progress in all domains, including E-Commerce, which oversees the sales system to transition from traditional to digital, various advantages are provided for producers and consumers involved in sales E-Commerce.

E-Commerce (Electronic Commerce) has lately evolved, with thousands of businesses selling their items on websites and social media. Lazada, *Buka Lapak*, and other similar websites are examples [1]. E-commerce is the process of transferring transactions or information over the internet. The advent of e-commerce is inextricably linked to the advancement of information technology, particularly the internet. Research [2] aims to solve problems that occur, such as the absence of reports printed from sales results. So those sales records are still in the form of chats stored on WhatsApp. There are no reports published from the remaining stock of goods that are still available every month. Companies in the fashion sector use the internet as a marketing field, namely marketing their products through websites, social media, etc. There is a change from offline sales to online sales. This is due to the high use of gadgets and increasing internet visitors so that there are opportunities for fashion companies to market their products [3]. Websites can be used to market products sold or referred to as digital marketing [4].

Previous research using adopting User Satisfaction Models is used for user usability analysis for website users [5]. Website analysis and design are also widely implemented for web-based mapping applications, using the system development life cycle (SDLC) model [6].

The case study in this paper is the Marketplace business, which sells used clothing, which has become a rare product that is now in high demand because used clothing has unique motifs, and product stocks are restricted. Because the store exclusively uses Instagram as a promotional medium, a large portion of the goods stock remains unsold. Based on the issues that arise, the store requires an E-commerce website to facilitate promotion. The research also has the advantage of making corporate procedures more accessible and known to the general public to improve sales.

A Content Management System (CMS) can undertake digital marketing by creating an e-commerce website that attracts customers from a broader spectrum of users. Search Engine Optimization (SEO) is used in business processes and product marketing to reduce expenses associated with the product marketing process. The Business Model Canvas (BMC) is used to create an online business model. Unified Modeling Language (UML) diagrams, such as Activity Diagrams, Use Case Diagrams, Component Diagrams, and System Sequence Diagrams, are used in the system design. As a result of this research, the e-commerce website will be displayed on the first page of the search site, allowing it to assist shop transaction activities and serve as a promotional medium.

II. RESEARCH METHODOLOGY

Figure 1 depicts the phases beginning with data collection and ending with problem formulation. Data collection methods include interviewing, observing, and conducting a literature review. The next stage is to model your firm using the Business Model Canvas (BMC). The website is then designed using the Unified Modeling Language (UML). Following the completion of the design, the implementation of Search Engine Optimization is carried out (SEO).
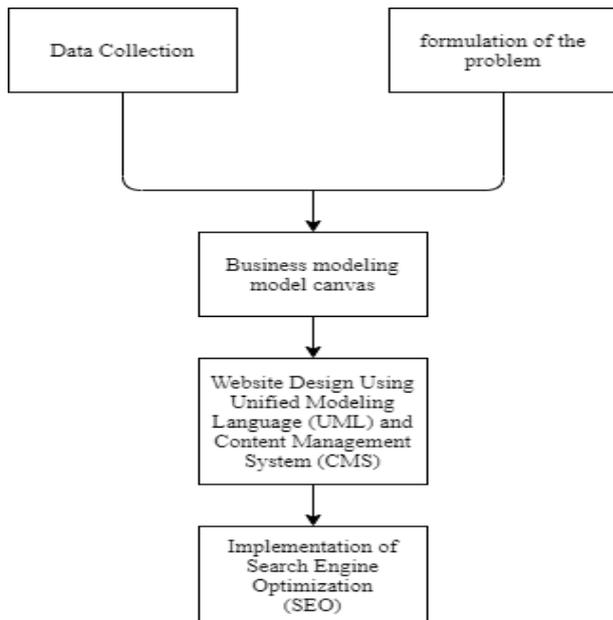
Figure 1. Research steps

A. Problem Identification and Data Collection

Observation, interviews, literature studies, and document analysis were utilized to obtain data. Observations are conducted by visiting directly to the business location to collect data and understand the business operations at the e-commerce website. Interviews were conducted with shop owners to determine the problems that occurred in marketplace store by asking some oral questions. Literature studies were conducted to examine data from books in the library and e-books and from several previous research journals used as references for research activities. The analysis of a collection of documents relating to a business process' transaction procedure to obtain useful information for system design.

B. Business Modelling

In conducting this research, researchers in conducting business modeling use the Business Model Canvas (BMC). BMC is a framework that discusses the business model by presenting it in a visual form in the form of a canvas painting to be understood and understood easily [7]. The description is broken into nine parts: client segment, value proposition, channel, customer relationship, revenue stream, key resources, key activities, key partners, and cost structure, which are as follows:

- A value proposition is the value advantage of a store's goods.
- Consumer segments are a method of determining the customer segmentation that will be the store's target business.
- Customer relationships allow businesses to gain new clients while also retaining existing ones.

- Channels are media that are utilized in stores to convey value propositions to customers.
- Key actions are those undertaken by the store in the process of developing a value offer.
- A key partnership is a partner or partner who helps run business activity in the store.
- Key resources are the resources that the retailer uses to run its operation.
- Revenue Streams are the amounts of money that a store receives from customers.
- Cost structure refers to the expenses incurred by the Marketplace store to conduct business.

C. Website Design

Some stages must be completed to develop this website utilizing the WordPress content management system and establish a website, such as creating activity diagrams to visualize planned business activities from the store. A Material Management System (CMS) is a web application or web software used to manage content on a website/blog/application [8]. The use case is designed to explain the concept of the actor's relationship with Marketplace e-commerce and the website. Sequence diagrams are used to explain how an operation will be sent and when it will be done. Component diagrams are used to show the structure and interdependence of plugins in e-commerce websites. Building a professional online shop necessitates a domain name for the website, hosting, and an online shop template. WordPress is a popular and easy-to-use blogging platform.

D. Search Engine Optimization (SEO) Model

Search Engine Optimization (SEO) is the technique of increasing the visibility of a website or web page in search engines' "natural" or unpaid ("organic") search results. In general, the earlier (or higher ranking on the search results page) and more frequently a site appears in the search results list, the more visitors it receives from search engine users. SEO can target various searches, such as picture searches, local searches, video searches, and academic searches [9].

There are two types of SEO techniques: on-page SEO and off-page SEO. On-page SEO is an action performed on website pages for search engines to index keywords quickly [10]. Many things may be done to perform On-Page SEO strategies, such as ensuring that the proper keywords are used in the description's domain name, title, description, tags, headings, images, and text. Off-Page SEO is an action that is carried out to boost traffic on elements outside the website to influence website rankings based on targeted keywords. Off-Page SEO on a website is frequently done by internet business owners by providing quality backlinks on the primary webpage [10].

The SEO strategy employed in this study is On-Page SEO, which involves optimizing the website so that it is of good quality and easy to find by users and making the website appear SEO-friendly. The usage of SEO on a website is critical since it may boost marketing and is the greatest

strategy to generate brand recognition by improving SEO quality.

III. RESULT AND DISCUSSION

A. Business Model Canvas (BMC)

Figure 2 is the Business Model Canvas (BMC) of the store. A value Proposition refers to the value provided marketplace shop in its business, which includes quality second-hand products, appealing packaging, second-hand ready-to-wear clothing, and free random products. The store marketplace purchasers are sweater collectors who buy quality second-hand products from marketplace stores, male or female aged 16-30 years, drop shippers. Customer Relationship is a method of establishing relationships with consumers to maintain their trust, such as by providing testimonial evidence such as photo evidence of goods received by customers or proof of bank transfers and providing free shipping. Channels are shop operates, specifically through social media (Instagram, Shopee, and WhatsApp) and e-commerce websites.

Key Activities are tasks performed marketplace shop to run its business, such as searching for second products, product marketing, and product packaging. Key Resources are components required marketplace shop to conduct business, such as cell phones for marketing products on social media or marketplaces, creating product postings, laptops for editing photographs to post products, and boxes and accessories for packing clients. Key Partners, parties involved in the operation of marketplace store, such as collaboration with second suppliers, expedition services to work together to send products, and hosting and domain providers.

Cost Structures are all costs incurred marketplace, beginning with advertising costs such as paid promote, which means we advertise to influencers, artists, or celebrities with high engagement and appropriate in their field, packing costs such as plastic, brown paper, and glue, internet fees for carrying out product advertising activities, posting products, and creating product content, and finally hosting. Revenue Streams is a component carried out by marketplace to generate revenue, specifically by selling second-hand clothes online, such as in a marketplace, such as Shopee.
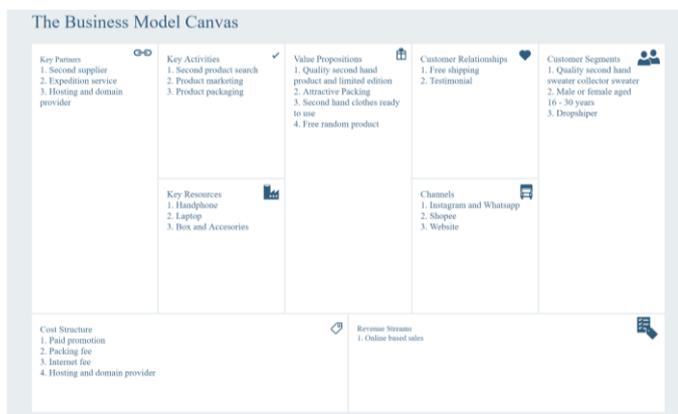

Figure 2. Business model canvas shop

B. Website Design

Unified Modeling Language (UML) website design UML is one of the visual language standards extensively used in the corporate world to define requirements, perform analysis and design, and describe the architecture of all software system artifacts in object-oriented programming [11].

1) *Activity Diagram*: The structure of an activity diagram is quite similar to that of a flowchart or flowchart in a structured system design. An activity diagram describes the proposed business process, specifically the product ordering process based on the activity diagram in Figure 3, the payment confirmation process based on the activity diagram in Figure 4, the revenue reporting process based on the activity diagram in Figure 5, and the delivery process based on the activity diagram in Figure 6. Figure 7 is an activity diagram of a sale.

Figure 3 depicts the process of conducting a transaction on the marketplace website, in which the consumer opens the marketplace website page, then clicks the button for the marketplace product category. Next, the customer selects a product, then adds it to the cart, then checks out, then fills out the order details, and finally, when the consumer has completed selecting the customer's product, the customer places an order, and the admin receives and checks orders from customers.
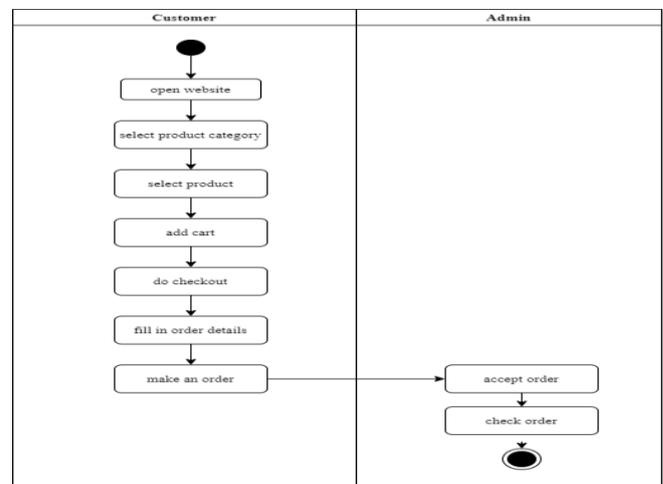

Figure 3. Activity diagram ordering

Figure 4 depicts how a customer confirms a payment. First, the customer accesses the website page, then navigates to the payment confirmation menu. On the payment confirmation page, the customer can fill in the payment confirmation details, after which the customer submits the payment confirmation. The administrator checks the payment confirmation. If approved, the admin accepts the order status and converts it to a process; otherwise, the client must confirm again. When the administrator checks, there is a decision symbol that allows the administrator to choose, but the merge symbol after accessing the website is a mix of website opening activities and activities when the administrator declines payment confirmation.
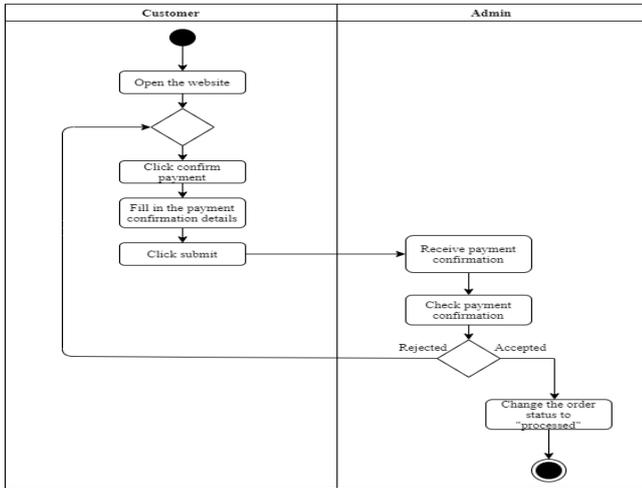
Figure 4. Activity Diagram of Payment Confirmation

Figure 5 shows an activity diagram for the income report, in which the administrator first explains the income report and then opens the internet page. The administrator then produces a sales report, submits it to the owner, and receives an income report from the administrator.
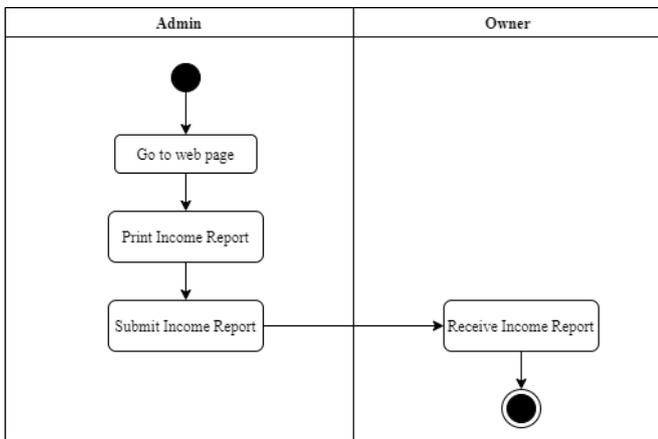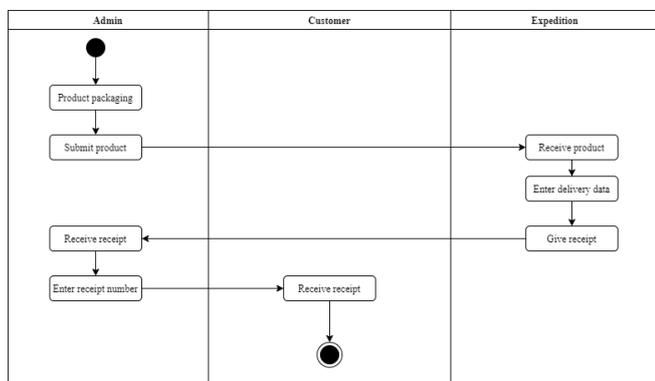

Figure 5. Activity Diagram of Income Statements

Figure 6. Delivery Activity Diagram

Figure 6 is a shipping activity diagram; the admin packs the product, and then the admin delivers the product to the expedition. After that, the expedition received the product from the admin, and then the expedition entered the shipping data. The expedition gave the receipt number to the admin, the admin received the receipt number and input receipt, after that, the customer received the receipt number.
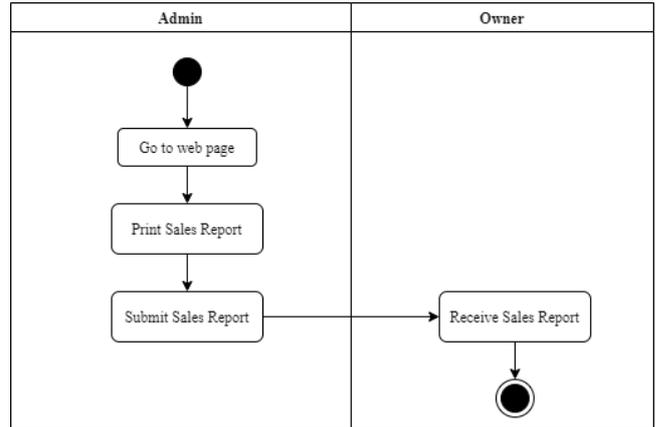

Figure 7. Activity Diagram Sales Report Laporan

Figure 7 is an activity diagram image of a sales report; the admin first opens the website page, prints a sales report, sends a sales report to the owner, and then receives a sales report from the admin
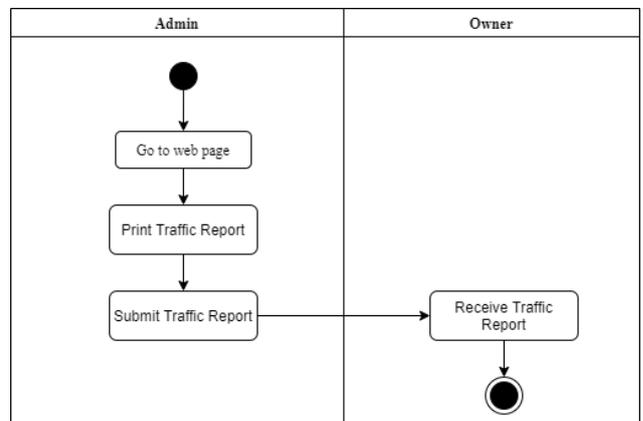

Figure 8. Activity Diagram of Traffic Reports

Figure 8 depicts an activity diagram of a revenue report in which the admin explains the income report by opening the website page, the admin prints a sales report, the admin submits a sales report to the owner, and the owner receives a traffic report from the admin.

2) Use Case Diagram: Use cases are a series or description of interrelated groups and form a regular system that is carried out or supervised by an actor [12]. Figure 9 depicts the admin use case and explains how the admin takes orders and checks orders. The admin then receives a payment confirmation, enters the receipt number, prints a sales report, a revenue report, and a traffic report. The next customer then instructs the previous customer on how to place an order. The customer then confirms the payment and finally receives a receipt number.
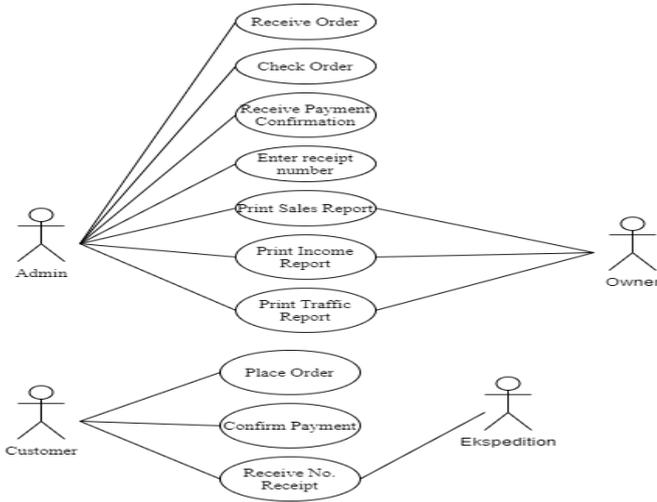
Figure 9. Transaction diagram use case

3) Component Diagram: Component Diagram depicts the architecture and infrastructure. The software used in the design is an Information System [13]. The WordPress CMS has various plugins, which are illustrated in the Figure 10 component diagram. The component diagram includes Element or plugins, Yoast SEO, WooCommerce, WooCommerce Cancel Abandoned Order, Jetpack, WooCommerce Confirm Payment, ongkoskirim.id, and WooCommerce Advance Order Export. These plugins are all dependent on WordPress components. Each component has a specific purpose, such as the woo-commerce plugin used to enable e-commerce on WordPress. Then, the WooCommerce cancel abandoned order plugin and the WooCommerce confirm payment plugin, both of which are utilized to facilitate transaction activities on the newly built e-commerce. Additionally, the element or, Jetpack, Yoast SEO, and ongkoskirim.id plugins are used to support WordPress-based e-commerce activities.
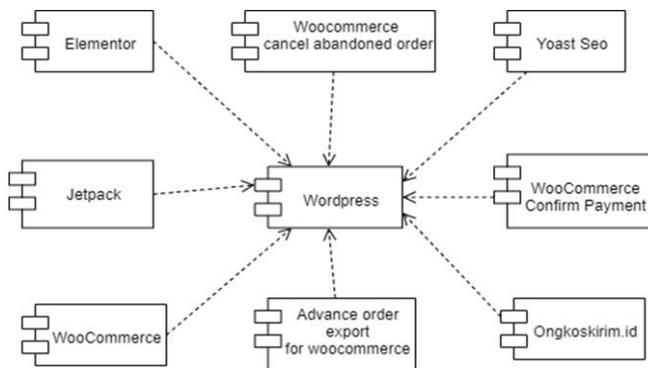

Figure 10. The Component diagrams

4) Sequence Diagram: The interaction between things in and around the system is depicted in Figure 11 by a sequence diagram, in the form of a message that is described in relation to the passage of time [14]. The procedure A customer interacts with the system while making an order for a product

by first selecting the product category, then selecting the desired product. Finally, the system shows the product detail page. The customer then clicks add cart, then payment, then the system presents the payment display, and finally, the consumer inputs the payment and submits the order.
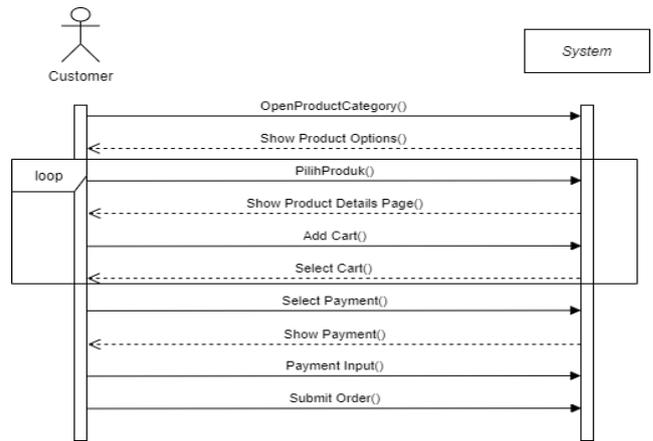

Figure 11. System sequence diagram ordering

Figure 12 depicts a system sequence diagram report in which the admin enters the report menu and then opens the report menu. The admin then displays the report options, and the system displays the store's sales page.
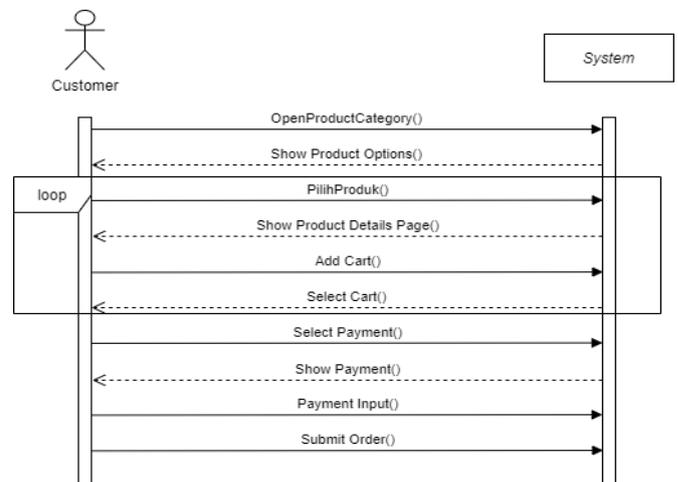

Figure 12. System sequence diagram report

C. E-commerce Using Search Engine Optimization (SEO)

On-Page SEO is the method used in SEO for e-commerce websites. The task at hand is to use Google Console to register the URL and sitemap of the marketplace store e-commerce website. Following the website's registration, the next step is to look for the best keywords to use on the website.

Based on the keywords obtained, the following set of SEO techniques will be applied to each product on the e-commerce website. The settings are made using the pre-installed Yoast SEO plugin, such as setting keywords, SEO titles, Slugs, and Meta Descriptions. In addition to Yoast SEO, the product

image alt text and product image alt text settings are keyword-based. Figure 13 results from a search based on the keywords that appear on the first page of search engines.
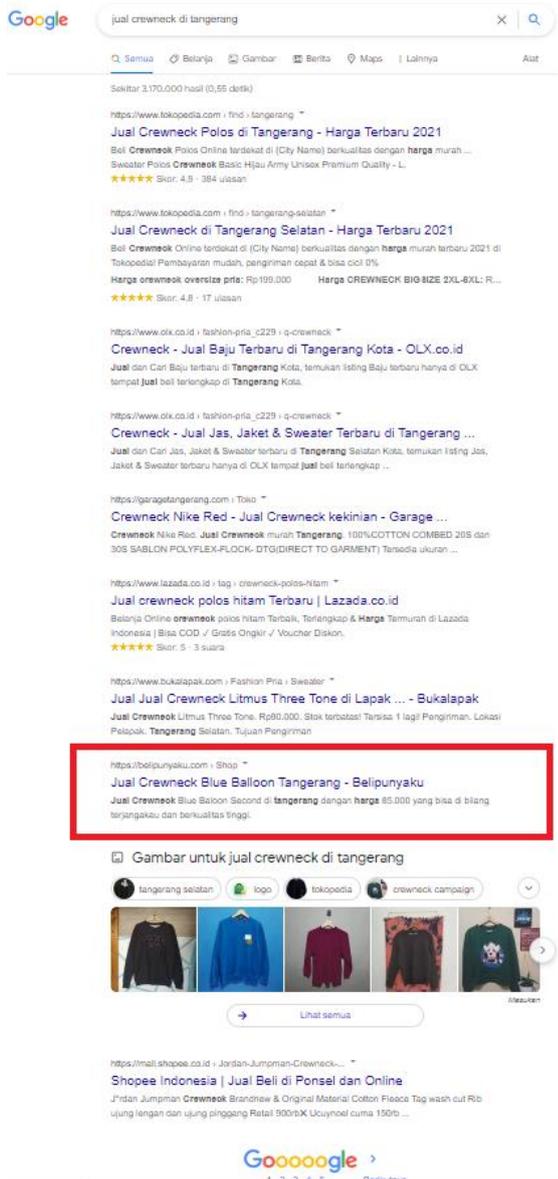

Figure 13. SEO Results

IV. CONCLUSION

The created E-Commerce website can be utilized as a promotional medium by the Marketplace store and grow the sales market and maximize sales promotion. Search Engine Optimization employing the phrase "selling crewneck in

Tangerang" resulted in the top page of results for the marketplace store e-commerce website. Currently, the results of On-Page SEO are limited to one search engine; more On-Page SEO settings for other search engines are required. Furthermore, Off-Page SEO strategies such as building backlinks to websites on social media are required.

REFERENCE

[1] K. Kasmi and A. N. Candra, "Penerapan E-Commerce Berbasis Business To Consumers Untuk Meningkatan Penjualan Produk Makanan Ringan Khas Pringsewu," *J. Aktual*, vol. 15, no. 2, p. 109, 2017.

[2] A. Fuad and S. Juanita, "Menggunakan CMS Wordpress untuk meningkatkan penjualan pada Online Shop Flanelis," *J. IDEALIS*, vol. 3, no. 1, pp. 511–518, 2020.

[3] Y. N. Hanifah, Y. Yuliniar, and P. Simarmata, "Analisis Impulse Buying Behaviour Pada Uniqlo Store Pondok Indah Mall Jakarta," *Konf. Ris. Nas. …*, no. 1, pp. 1282–1297, 2020.

[4] D. Ratnasari, D. B. Qur'ani, and A. Apriani, "Sistem Informasi Pencarian Tempat Kos Berbasis Android," *J. Inf.*, vol. 3, no. 1, pp. 32–45, 2018.

[5] A. Taqwiym, "Usability Analysis of Website-based Applications by Adopting User Satisfaction Models," vol. 6, no. 1, pp. 49–52, 2021.

[6] A. V. Vitianingsih, D. Cahyono, and A. Choiron, "Analysis and design of web-geographic information system for tropical diseases-prone areas: A case study of East Java Province, Indonesia," *Proc. - 2017 4th Int. Conf. Inf. Technol. Comput. Electr. Eng. ICITACEE 2017*, vol. 2018-January, no. October, pp. 255–260, 2017.

[7] A. Sovia Pramudita, "Formulasi Model Bisnis Hostel di Bandung dengan Pendekatan Value Chain dan Business Model Canvas (Studi Kasus: Pinisi Backpacker)," *ISEI Bus. Manag. Rev.*, vol. II, no. 1, pp. 32–38, 2018.

[8] D. Anjarkusuma, B. Soepeno, J. A. Niaga, N. Malang, and D. A. C. Id, "Penggunaan Aplikasi CMS Wordpress Untuk Merancang Website Sebagai Media Promosi pada Maroon Wedding Malang," *J. AKUNTANSI, Ekon. dan Manaj. BISNIS*, vol. 2, no. 1, p. 63, 2014.

[9] F. Azim, P. Studi, P. Vokasional, T. Elektronika, and U. M. Riau, "PENERAPAN TEKNIK SEO (SEARCH ENGINE OPTIMISATION) DENGAN METODE ONPAGE DAN OFFPAGE PADA WEBSITE CARGORIAU . COM Penerapan Teknik SEO (Search Engine Optimization) dengan Metode Onpage dan Offpage pada Website CARGORIAU . COM," *Riau J. Comput. Sci. Vol.05 No. 01 Tahun. 2019* , vol. 05, no. 01, pp. 32–37, 2019.

[10] A. Sofyan, E. Ferdianto, R. Rahmawati, and R. K. Aldi, "Pengaruh Search Engine Optimization (Seo) Dan Riset Kata Kunci Terhadap Pendapatan Toko Online," *Indonusa Conf. Technol. Soc. Sci.*, vol. 1, no. 1, pp. 351–356, 2019.

[11] Y. A. Pratama and E. Junianto, "Sistem Pakar Diagnosa Penyakit Ginjal Dan Saluran Kemih Dengan Metode Breadth First Search," *J. Inform.*, vol. 2, no. 1, 2016.

[12] M. Tabrani and I. R. Aghniya, "Implementasi Metode Waterfall Pada Program Simpan Pinjam KOPERASI SUBUR JAYA MANDIRI SUBANG," *J. Interkom*, vol. 14, no. 1, pp. 44–53, 2019.

[13] M. F. A. Luthfie and J. Sutrisno, "Analisa Dan Perancangan Sistem Informasi Penjualan Dan Jasa Service Aksesoris Motor Berbasis Web Pada Auto39 Bike Shop Menggunakan Unified Modeling Language," *I D E a L I S*, vol. 2, no. 1, pp. 61–66, 2019.

[14] D. Dedi, S. Sutarman, and N. Septiyani, "Sistem Informasi E-Commerce Berbasis Web Pada Toko Indonesia Okubo Jepang," *Acad. J. Comput. Sci. Res.*, vol. 2, no. 1, pp. 1–7, 2020.