

## Implementation of Search Engine Optimalization (SEO) on the Village-Owned Enterprises Luhur Sembada Website

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### Abstract

*Luhur Sembada* Village-Owned Enterprises (LSVOE) purpose to develop various business units to realize the welfare of the people of the Kalurahan Sidoluhur community through productive economic development efforts. However, the sales media run is ineffective and efficient because the information system is still managed manually. This study aims to facilitate all information and product sales in the LSVOE so that it can be known through a website-based information system and apply SEO techniques to increase the reach of sales promotion on the website. Data collection are carried out through observation, interviews, and literature studies. This research uses the system development life cycle method for website creation and applies On Page and Off Page SEO techniques. This research resulted in the website of the information system of the LSVOE, which was first tested using black bock testing. In addition, this research resulted in website development using technical SEO, which was first tested using web.dev and page speed. The website that has been designed has successfully entered page one of the Google search and is easily searched by the wider community. A website-based information system can expand information on the productive economic development of the LSVOE and help improve website promotion.

**Keywords:** information systems; SDLC; SEO; village-owned enterprises

### INTRODUCTION

Micro, Small, and Medium Enterprises are some industries that significantly contribute to spurring Indonesia's economic growth. However, the creative economy has many challenges, especially in product market development. Data from the Central Statistics Agency cited shows the results of 2016 creative economy statistics data have shown that from 2010-2015, Indonesia's creative economy GDP rose from 525.96 trillion to 852.24 trillion (an average increase of 10.14% per year). The creative economy workforce sector in 2010-2015 experienced a growth of 2.15%, with the number of creative economy workers in 2015 as many as 15.9 million people (Marlinah, 2017).

*Luhur Sembada* Village-Owned Enterprises have the purpose of developing various business units to realize the welfare of the people of *Kalurahan Sidoluhur* community through efforts to build the productive economy, small and medium industries, service sector, waste management, and others. The latest information in the Village-Owned Enterprises of Luhur Sembada Village.

By using posters and social media is considered not optimal in expanding the latest information and expanding the marketing of products from village-owned business units. A system is needed that makes it easier for consumers to see the goods and descriptions sold. The use of WhatsApp to create and disseminate posters is considered inefficient. It will take a lot of time because the seller must share posters and send the goods and their descriptions to potential buyers. A practical, efficient, and cheap marketing strategy is needed to support the



Luhur Sembada Village-Owned Enterprises in marketing products and expanding the latest information.

According to Ardiansyah (2021), information technology develops in all aspects of life; these developments can facilitate all human activities that are more effective and efficient. Therefore, the Village-Owned Enterprises of *Luhur Sembada* Need to create an information system in the form of a website that is expected to have a wider reach and thus help increase website promotion. According to (Artanto & Nurdiyansyah, 2017), optimizing a website is very important so that the website can function better.

Based on the problems presented, The Village-Owned Enterprises of *Luhur Sembada* *luhursembada.com* need technology that must be applied to expand the website's reach. A *website* is considered to be able to develop and facilitate access to information without being limited by place and time. In addition to creating a website, the development of the website is also necessary. One way of website development that can be applied is to use Digital Marketing in the form of a website based on Search Engine Optimization (SEO) (Pratomo et al., 2018). The purpose of using SEO on the website of Village-Owned Enterprises *luhursembada.com* is so that when google users enter relevant keywords, the website of Village-Owned Enterprises *luhursembada.com* can be easily found.

The results of previous research proved by Putra (2020) and Handayani (2018) that sales using a website could make it easier for sellers and buyers because of its wider reach, so it can expand the sales network. However, previous research by (Masruri, 2022), (Pratomo et al., 2018), and (Azim, 2019) only used Off Page SEO and On-Page SEO did not optimize Technical SEO Tools to be more effectively indexed in search engines. Optimizing Technical *SEO* is a novelty in this study. Optimizing Technical *SEO* Tools is done by creating a Sitemap and Submitting URLs on the google search console. By utilizing technical SEO, websites are easier to crawl and understand by search engines

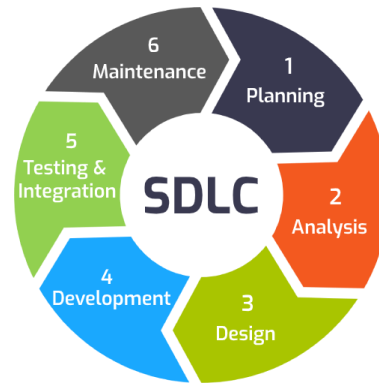
Based on the description that has been presented, the purpose of this study is to apply SEO on the website of a Village-Owned Enterprise of *Luhur Sembada*, *luhursembada.com* using On-Page and Off-page methods with the help of Technical SEO Tools analysis. With the implementation of SEO, the website is expected to have a broad reach and, over time, can increase the number of website visitors and develop website marketing for Village-Owned Enterprises Owned by *Luhur Sembada Village* *luhursembada.com*.

## **METODE**

The ideal stages of completing the research start with needs analysis, data collection, and system design, as well as the sets of testing information systems. (Afuan et al., 2021) Observation, interviews, and literature studies carry out data collection techniques. Data collection aims to understand the expected software needs and what cannot be in the software.

Observations were made by holding a direct visit to Village-Owned Enterprises Luhur Sembada. This visit lasted one day to survey the section related to research and data needed, especially the data in the area related to expanding existing information and related to the sales system of business units being applied to Village-Owned Enterprises *Luhur Sembada*. The interview was conducted by asking directly to the Village-Owned Enterprises *Luhur Sembada* regarding the information system and product sales at Village-Owned Enterprises *Luhur Sembada*. This method is carried out to obtain accurate data on the system's needs to be built and developed. Literature studies are carried out to collect references from previous research and other libraries to enrich insights so that the desired goals can be achieved as needed. After the data collection stage is carried out, and the website's needs are known for the sale of Village-Owned Enterprises, the website is designed and developed.

The SDLC (System Development Life Cycle) technique with a waterfall approach is used at the stage of website design and website development with SEO techniques. The procedure with the waterfall method is systematic, starting with the phases of system needs, analysis, design, testing, and maintenance (Nasution et al., 2021). The steps carried out can be seen in Figure 1



**Figure 1.** System development life cycle

In the website creation stage, the first stage, namely planning and analysis, is the stage that is passed to find out the running system, the shortcomings of the system, and the needs of the existing system; in the second stage, namely the design of the method according to the analysis of requirements. After producing a web-based information system plan, the next stage of the web is tested using a black box by operating a system application designed to see the display of inputs and outputs produced (Muntohar, 2020). In the website development stage, the first stage is planning to prepare the keywords to be targeted. In the second stage, namely analysis, the best keyword analysis will be applied to the Village-Owned Enterprises website *luhursembada.com*. With the right keywords, the website will be easily understood by the google search engine and easy to appear on page 1 of the SERP. Furthermore, at the design and development stage, the design of a website is carried out, and at the implementation stage, the application of the On Page and Off Page SEO methods is carried out.

In the testing stage, a website optimized with SEO techniques is carried out according to the targeted keywords. The test was carried out to evaluate the prototypes made and used to clarify the needs of information systems (Efendy et al., 2021). The last stage is maintenance, maintaining the website by constantly updating content and keywords regularly.

## **HASIL DAN PEMBAHASAN**

### **Hasil**

The result of this study is a website-based information system, namely the Village-Owned Enterprises of *Luhur Sembada* *luhursembada.com*. In addition to website design, this research resulted in optimizing the website so that it is easy to search in google search engines. The goal is optimized by using SEO techniques so that the sales of products of *Luhur Sembada* Village-Owned Enterprises reach a more comprehensive, cheaper, and more efficient buyer network. It has been explained previously that several stages are carried out before producing a web-based information system, including Planning and analysis, design, development, testing, and maintenance.

First, the planning and analysis stage is to plan or identify the needs of the bundles to solve problems in the Villages-Owned Enterprises *Luhur Sembada*. This planning stage also involves collecting all data, such as information needed in website development. The data contains the content of the website and an overview of the website. After that, the researcher

will compile a website according to the information data that has been collected, planning and analysis stages produce findings that the system that is already running to market the sale of products of the *Luhur Sembada* Village-Owned Enterprise is inefficient. Product marketing is done manually, using WhatsApp social media and making posters and then disseminating them to the people of Sidoluhur; this will take cost and time.

Second, the design stage is to design to develop a website. The specification uses the programming language as the backend and Bootstrap as a CSS framework on the frontend; using a MySQL database, the website's security must be SSL, and the website must be responsive or mobile friendly. It can be accessed using all types of OS.



Figure 2 Product Detail Page

The result of the website design is that all products sold by the *Luhur Sembada* Village-Owned Enterprise can be marketed through a website complete with product descriptions. In Figure 2, you can see one of the products sold, complete with its description. Third, At the website optimization stage, resulting in the application of SEO techniques, the planning stage produces a keyword plan to be targeted; at the analysis stage, it makes the application of keywords that will have been prepared at the planning stage, namely the latest news of the *Luhur Sembada* Village-Owned Enterprise today. After that, the implementation stage results in applying on Page and Off Page SEO Techniques. The application of On-Page SEO techniques starts with creating a title according to the targeted keywords because the title is the most essential part of website optimization (Achmady, 2016). The title will appear on a search engine page such as figure 3.

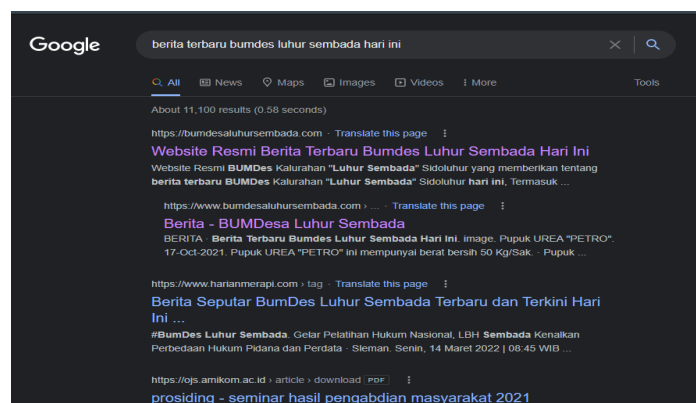


Figure 3. Website title in search engine results

Next, the implementation of Meta tags is carried out. This part is very important, because google engine starts indexing through this Meta Tag. The Meta Tag sections that are often optimized are meta title, meta description and meta keywords. Kurniadi et al. (2020) By configuring the correct and correct meta tag, the results will maintain the strength of a website's position on the Google search engine. The Meta Tag used by the researcher listed in figure 4 (Kumar et al., 2019).

After implementing the meta tag, internal links are carried out so that all links on the website are easily read by users and by google search engines and Alt images by optimizing the content of the image by giving ALT tags to each image (Handayani & Febriyanto, 2018). The application of Off Page SEO techniques starts with the Backlink stage. This section generates hyperlinks on several well-known websites that have high rankings in the google search engine. The hyperlink is addressed to the Village-Owned Enterprises website aluhursembada.com. After that, village-owned enterprises website registration is carried out aluhursembada.com into Search Console and finally put the Village-Owned Enterprises website link aluhursembada.com on Social media sites such as facebook, twitter, instagram.

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10 <title>Website Resmi Berita Terbaru Bumdes Luhur Sembada Hari Ini</title>
11 <meta name="description" content="Berita Terbaru Bumdes Luhur Sembada Hari Ini, Informasi Terbaru Tentang
    Bumdes Luhur Sembada Terkini. Baca Selengkapnya Disini">
12 <meta name="keywords" content="Berita Terbaru Bumdes Luhur Sembada Hari Ini, Berita Terbaru Bumdes
    Sidoluhur Hari ini, Berita Terkini Di Bumdes Luhur Sembada, Informasi Terupdate Bumdes Luhur Sembada,
    Informasi Terkini Tentang Bumdes Luhur Sembada">

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**Figure 4.** Meta tag implementation

**Table 1.** Blackbox test results

Activity	Expected results	Succeed
Login dahsboard admin	Can log in according to the username and password that have been set by the bumdes	√
Add new news and news categories	Can add new news and can add new news categories	√
Edit news and categories	Can edit new news and can edit new news categories	√
Edit profil bumdes	Can edit bumdes profile	√
Change password	Can change account password	√
Logout	Can log out of your account	√

Implementing technical SEO is an optimization technique on the website so that the website can be more easily recognized by search engines, easily indexed in search engines, and quickly found by users. The application of technical SEO begins with registering a website into google console tools with the aim that we can do a sitemap and website more quickly indexed in search engines. In addition, the google console can monitor website statistics. After that, a sitemap submission is carried out. A sitemap is a collection of all the pages on our website. Using a sitemap will make the website easier to find in search engines because it has been indexed faster. By registering in the google console and creating a sitemap using these techniques, our website will be easier to index in search engines.

Fourth, at the stage of the trial process, blackbox testing is used for website testing. The results of testing using blackbox can be seen in table 1. The *results of the black box* test above show that all activities tested can run according to the scenarios adopted. The training

focuses on the login page, adding and editing news, adding profiles, changing passwords, and logging out. SEO testing using the web.adv and Pagespeed. The SEO test results can be seen in figures 5 and 6. The test results using the web. adv show that the components of performance score, best practice score, and accessibility show a number above 50, which means that website optimization is considered quite good.

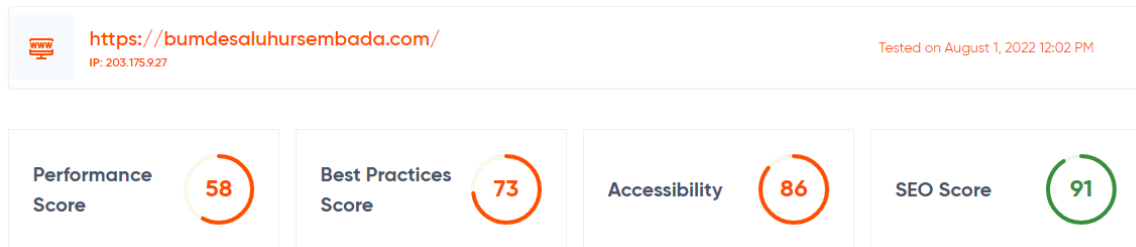


Figure 5. Test Results using web.dev

The test results using Pagespeed showed that the performance component was above 80, which means that the website's optimization is considered good. In addition, search results after 1 Month using On Page and Off Page SEO techniques on the website luhursembada.com with the keyword "the latest news for Village-Owned Enterprises today" are listed in figure 6. In the fifth, namely the last stage of maintenance, which is to carry out website maintenance by always updating content and keywords regularly on the website

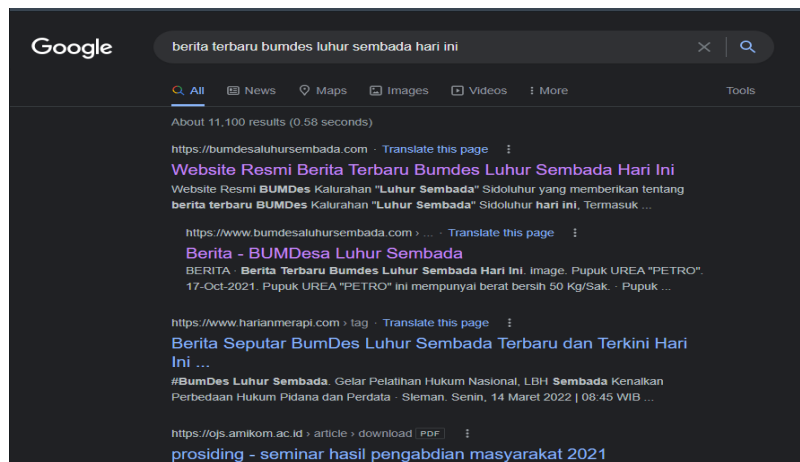


Figure 6. Website Title in Search Engine Results

## Discussion

A system is an arrangement consisting of several functional components interconnected to fulfill a specific process (Cahyono et al., 2013) A website is a collection of several pages containing information in the form of text, images, videos or animations provided through internet channels so that they are easily accessible from all over the world. Optimizing a website can be done by implementing a responsive appearance and Search Engine Optimization (Hayaty & Meylasari, 2018). A responsive website is a website that can access through all devices, one of which is a mobile device (Riasinir & Widyasari, 2019). Websites that can be responsive are prioritized by the google search engine in the process of indexing a website. Therefore, google indexing results will determine the search ranking on a website (Saputra & Astuti, 2018) SEO is a technique used to optimize a website to get high rankings in search engines. The search engines widely used today are Google, Yahoo, Bing and others (Arifin et al., 2019).

SEO methods are divided into two, namely the On-Page SEO Method and Off Page SEO (Priskila, 2018) On-Page SEO is a method carried out directly on the website page with the aim that search engines can easily index keywords created on the website. The On-Page SEO method has many ways that can be done, including creating keywords and ensuring that the keywords are written on the title, description, Meta tag, Meta Description and Meta Keyword. Then alt images and internal links (Masruri, 2022).

The Off Page SEO is an optimization method carried out from outside the website to increase website traffic with targeted keywords. The Off Page SEO method has many ways can be done, including Guest posts, social media and creating backlinks on the main website (Azim, 2019). On the other hand, to optimize SEO so that it can be more effectively indexed in search engines, you can use Technical SEO Tools. This technique can be done by creating a Sitemap and Submitting URLs on the google search console. By utilizing technical SEO, search engines make websites easier to crawl and understand.

At the analysis stage, it has been seen that the system running so far is ineffective because it relies on posters and the Whatsapp application. A more efficient information system is needed to reach buyers more efficiently and cheaply. Research results by Hayaty & Meylasari (2018), Widodo & Triwanggono (2018), and Riasinir & Widyasari, (2019) prove that the existence of an e-commerce-based website can reach more buyers. At the website optimization stage using SEO techniques, it concluded that the system designed with the SDLC method runs well and is by needs. That is evidenced by the search results after 1 Month of using On Page and Off Page SEO techniques on Village-Owned Enterprises aluhursembada.com websites with the keyword "the latest news Village-Owned Enterprises luhur sembada today" in the top search order. This also proves that applying technical SEO can make it easier to introduce sitemaps on a website.

Previous research by Arifin et al. (2019), Artanto & Nurdiyansyah (2017), and Pratomo et al. (2018) proved that SEO can help optimize the website and is effectively used for e-commerce-based websites. On the other hand, the three studies have not examined the application of technical SEO. Technical SEO can make it easier for websites to be understood by search engines. It was also a novelty of this study. This research implies that the website Village-Owned Enterprises aluhursembada.com was successfully designed to make it easier for sellers and buyers to transact because the distribution of products sold can be marketed in a shorter time so that it is more efficient and cheaper than making posters.

Furthermore, website optimization using SEO techniques is expected to attract more buyers. Hence, Village-Owned Enterprises *Luhur Sembada* is to develop various business units to realize the welfare of the people of *Kalurahan Sidoluhur* through productive economic development efforts.

## CONCLUSION

The website-based information system has been successfully created because it operates optimally, and all features can run well after testing using black box testing. In addition, website optimization using On Page and Off Page SEO techniques is carried out using Technical SEO so that the Village-Owned Enterprises website luhursembada.com successfully appears on page 1 of the SERP (search engine result page) with keywords that have been targeted for one month. With a website, the promotion will be more efficient and cheaper than making posters and disseminating them. In addition, website optimization using SEO techniques can attract more buyers so that productive economic development can be realized faster. The advice for the subsequent system development is to integrate into the product ordering process, always look for the latest information about the development of SEO techniques, and constantly update articles, keywords & backlinks regularly.

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