

Research Article

Design of a Web-Based Instagram Content Management System to Support Brand Awareness for SR12 Herbal Cosmetics Products

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Abstract: PT. SR12 Herbal Cosmetics is a company engaged in the field of herbal and skin care. Founded in 2015 by Toni Firmansyah, S. Farm., Apt. and Asrianty Salam, S. Farm. This company has a vision to provide benefits to many people through the herbal and skin care products they produce. SR12 Herbal Cosmetics products are formulated based on research from certified scientists, and have been tested at the Sucofindo Laboratory, are free of mercury and hydroquinone, and have been registered with the Indonesian Food and Drug Supervisory Agency (BPOM RI). SR12 Herbal Cosmetics has several factories in West Java Province and has an extensive distribution network with hundreds of distributors and tens of thousands of partners throughout Indonesia. The goal to be achieved is to produce a management information system model including a management information system for PT SR12 Herbal Cosmetics. The research object chosen is a company in the field of cosmetics and skin care which has its head office in Gunung Sindur, West Java. This selection aims to form a management information system design model that is able to produce relevant and timely information for planning, controlling, decision making and evaluating the performance of activities. For the Web-Based Instagram Content Management Information System Design project to Support SR12 Herbal Cosmetics' Brand Awareness, I used Agile (Scrum) due to the dynamic nature of digital marketing and potential changes to the Instagram API or business needs. This allowed SR12 to get core functionality faster and provide iterative feedback, ensuring the system built was truly relevant to their brand awareness needs.

Keywords: Brand Awareness; Information System; Instagram; Planning; Website.

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1. Introduction

Instagram is one of the most effective social media platforms for building brand awareness among the public, particularly younger generations. PT SR12 Herbal Kosmetik, a company operating in the beauty industry, requires a structured digital strategy to introduce its products to a wider audience. However, manually managing Instagram content makes it difficult for the marketing team to schedule and organize content efficiently. By utilizing an information system, the content management process can be carried out in a more organized and scheduled manner. Therefore, the design of a web-based Instagram content management

information system is highly necessary to support SR12's digital product branding strategy. Although the system has not yet been tested directly with end users, the proposed system has been functionally designed as an initial solution to support efforts to increase brand awareness through social media.

PT SR12 Herbal Kosmetik, as a business entity operating in the herbal beauty and personal care industry, recognizes the critical importance of maintaining a strong presence and interaction on social media platforms, particularly Instagram. With its visual focus and millions of users in Indonesia, Instagram has become one of the most effective marketing and communication channels for reaching SR12's target market.

SR12 Herbal Skincare is one of the beauty and herbal product lines manufactured by PT SR12 Herbal Perkasa, which was established in 2015 by Toni Firmansyah, S.Farm., Apt., and Asrianty Salam, S.Farm. (Sukowati. www.sr12sukowati.com/tentang-perusahaan-sr12/, accessed on September 29, 2021). Toni decided to establish a herbal-based cosmetics business because he observed that many consumers were shifting toward products made from natural ingredients.

With the support of his wife, he started the business with an initial capital of approximately IDR 600 million. Toni used these funds to develop the products. For one and a half years, he and his wife worked on creating product formulations while simultaneously preparing the business. As a result, they launched five skincare products in October 2016, namely day cream, night cream, facial soap, facial cleanser, and facial serum. Production was outsourced to partner manufacturing facilities.

The SR12 trademark was derived from the name of Toni's pharmacy, R12, with the addition of the letter "S" to represent skincare. For marketing purposes, Toni recruited five sales representatives who had previously worked with him in a cosmetics company because they were experienced professionals with extensive networks. Within four months, Toni had already recovered his initial investment. He continued expanding the product range, which has now grown to more than 60 products.

As demand continued to increase, he decided to manufacture some of the products independently. To support this expansion, he built three factories. One factory in Serang, Banten, produces raw materials, while two factories in Parung and Bogor, West Java, handle production activities. Regarding the facilities in West Java, Toni stated, "One was built independently at a cost of IDR 7 billion, and the other was purchased for IDR 10 billion." Together, these two factories can currently produce approximately 300,000 bottles per month. However, with more than 60 product variants, the total demand reaches approximately 600,000 bottles monthly. Each product requires around 10,000 bottles, making it necessary for SR12 to continue outsourcing part of its production to partner factories.

To date, Toni has not encountered significant business obstacles. The main challenge he faced involved financial reporting. Initially, the company did not employ professional financial management systems. "I improved the system step by step until, in early 2019, the system became well established," he explained. As the business continued to grow, Toni upgraded the company's legal status to a Limited Liability Company (PT). He also stated, "To be honest, many investors have approached us and offered partnerships or investments worth hundreds of billions of rupiah. However, I am not interested yet and do not currently need external assistance."

The opportunity targeted through the design of a website integrated with Instagram is to improve operational efficiency. Automating content management tasks would allow the marketing team to focus on more creative and high-impact strategic activities. It would also strengthen brand consistency by ensuring that all published content adheres to brand guidelines and maintains a strong and unified corporate image.

The content scheduling feature would enable PT SR12 to publish content during optimal times when the audience is most active, thereby increasing reach and engagement. Furthermore, the system would provide data-driven insights through comprehensive analytical tools that track content performance, identify audience demographics, and detect emerging trends. Such information is highly valuable for strategic decision-making.

In addition, the system would facilitate team collaboration by providing a centralized platform for content planning, creation, approval, and scheduling, thereby improving teamwork and accountability. It would also enhance customer interaction quality through comment and message management features, allowing the team to respond to customer inquiries and feedback more quickly and efficiently, ultimately increasing customer satisfaction.

With improved performance data, PT SR12 would also be able to measure the Return on Investment (ROI) of its Instagram marketing activities more accurately. The decision of PT SR12 Herbal Kosmetik to implement an Instagram Content Management Information System is likely driven by the desire to address increasingly complex content management challenges, capitalize on opportunities to improve marketing efficiency and effectiveness on the platform, and gain deeper insights into audience behavior and content performance.

By implementing an appropriate Content Management Information System (CMIS), SR12 is expected to establish a stronger Instagram presence, increase customer engagement, and ultimately support the company's overall business growth.

2. Literature Review

Information System

According to Praguna and Nugroho, an information system is a system designed to collect the requirements of daily transaction processing, support operations, organize strategic activities and organizational management, and provide the reports required by third parties (Praguna & Nugroho, 2021). An information system is a system designed to collect, store, manage, and deliver information needed by users for decision-making purposes. In this study, the information system refers to the system used to support the structured and efficient management of social media content.

Content

According to Iqbal, content refers to various forms of information and formats presented through media, particularly new media, including text, images, audio, and video (Iqbal, 2022). Content is any form of information or experience communicated to an audience. It may consist of text, images, videos, audio, or a combination of these elements, designed to provide value, educate, entertain, or persuade. In the context of digital marketing, as frequently discussed in the provided documents, particularly regarding Instagram marketing, content refers to materials created and distributed to attract, engage, and retain a specific audience with the ultimate goal of achieving business objectives.

Content Management

According to Raharjo, content management is the process of planning, organizing, managing, and controlling content within a digital environment (Raharjo, 2023). Content management is a systematic process involving the planning, creation, organization, publication, and evaluation of digital content. In this context, content management refers to the administration of all Instagram content activities of the company, ranging from content planning to performance analysis.

Instagram

According to Putri and Handayani, Instagram is a social media platform that enables users to share visual content in the form of photos and short videos, as well as interact through features such as likes, comments, and direct messages (Putri & Handayani, 2021). Instagram is a visual-based social media platform that allows users to share photos, videos, and stories with their followers. In this context, Instagram serves as the primary medium for digital promotion by PT SR12 Herbal Kosmetik.

Brand Awareness

According to Sudrajat Edi, brand awareness is a key factor in a company's success, enabling its products to perform better and compete effectively in the market (Sudrajat Edi, 2023). This concept reflects the extent to which a brand exists in consumers' memories, whether when they see a logo, hear a brand name, or encounter a specific product category. The higher the level of brand awareness, the greater the likelihood that consumers will choose the brand over its competitors.

Website

According to Ifitah Nurul Laily, a website is a collection of web pages contained within a domain or subdomain on the World Wide Web (WWW) and accessible through the Internet (Ifitah Nurul Laily, 2022). A website functions as a medium for publication, communication, and online transactions that can be accessed anytime and from anywhere, provided there is an internet connection.

3. Materials and Method

Research Object

The object of this study is PT SR12 Herbal Kosmetik, particularly the digital marketing division responsible for managing social media content, including Instagram. This division requires a system capable of managing content in a more structured manner to support product brand awareness. The digital marketing division of PT SR12 Herbal Kosmetik is responsible for managing digital communication strategies, content creation, post scheduling, customer interactions, and the utilization of information systems to support online marketing activities. The selection of this research object is based on the company's need to improve the effectiveness of Instagram content management as a means of strengthening brand awareness and reaching a wider consumer audience efficiently and systematically through the use of information technology.

Data Type

Qualitative Data, qualitative data are data presented in the form of narratives and verbal descriptions. They are obtained through various data collection techniques such as interviews, observations, and documentation, and are used as complementary data to provide a deeper understanding of the research findings.

Data Sources

Primary Data

Primary data are obtained directly from research respondents through interviews, observations, and document studies. These data are collected from users and administrators of the Instagram content management system that serves as the object of this study.

Secondary Data

Secondary data are obtained from previously available sources such as scientific journals, articles, books, and other written sources relevant to the topic of this research. These data are used to provide understanding and a general overview of the background of the research object.

Method Implementation

This study applies a qualitative research method. The implementation of the method in the research entitled "Design of a Web-Based Instagram Content Management Information System to Support Brand Awareness of SR12 Herbal Kosmetik Products" is carried out using a system development approach based on the Software Development Life Cycle (SDLC), specifically the Waterfall model. This method was selected because it provides clear and systematic stages and is suitable for projects whose feature requirements have been defined from the beginning.

The following are the three stages of system design using the SDLC method:

Requirements Analysis Stage

The first stage is requirements analysis, which involves gathering information from PT SR12 Herbal Kosmetik to identify the problems encountered, such as difficulties in scheduling posts, limitations in monitoring content performance, and a lack of integrated data for evaluating brand awareness.

System Design Stage

The second stage is system design, which includes the creation of a Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), and web interface design to ensure that the system's appearance and navigation flow are user-friendly.

System Development Stage

The third stage is system development, which involves designing a web-based system connected to the Instagram API for managing and monitoring content. The system is equipped with scheduling features, post archive storage, and engagement analysis capabilities.

Research Design

The research design is centered on an intrinsic case study, in which PT SR12 Herbal Kosmetik serves as the single unit of analysis. The researcher does not aim to generalize the findings to a broader population but rather seeks to obtain an in-depth understanding of the specific experiences of PT SR12.

The conceptual framework of the study guides the data collection and analysis process, which includes:

- a. Initial Conditions, the background of PT SR12, including the challenges faced in Instagram content management before system implementation.
- b. Implementation Process, the stages, decisions, resources involved, and obstacles encountered during the system implementation process.
- c. System Used, the type of system or platform selected, its main features, and the way the system operates.
- d. Impact and Benefits, Changes in work efficiency, content quality, audience engagement, and the team's perception of the system.
- e. Supporting and Inhibiting Factors, Internal and external elements that influence the success or failure of the system implementation.

Research Subjects

The primary research subjects are individuals directly involved in the Instagram content management process and system design at PT SR12 Herbal Kosmetik. These include:

- a. Marketing Manager / Brand Manager, To understand high-level strategies and decisions related to system implementation.
- b. Social Media Team / Content Creators, As direct users of the system, they can provide insights into daily operational experiences, frequently used features, and technical challenges.
- c. IT Team / System Administrators (if any), To understand the technical aspects of system implementation, integration, and maintenance.

4. Results and Discussion

Data Testing

Login Page, the Login Page provides an authentication form to ensure that only authorized administrators can access the system. Its purpose is to maintain system security and protect data from unauthorized access. The testing results show that the login form is able to validate email addresses and passwords correctly.

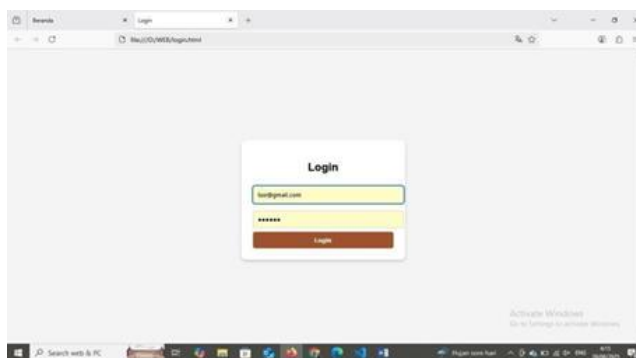


Figure 1. Login Page

Home Page, the Home Page displays a brief company profile of PT SR12 Herbal Kosmetik along with featured product images. It includes a "Order Now" call-to-action button that directs users to the purchasing page. The purpose of this page is to create a positive first impression for visitors, strengthen brand awareness, and encourage visitors to make purchases. The testing results indicate that all text, images, and buttons function properly.

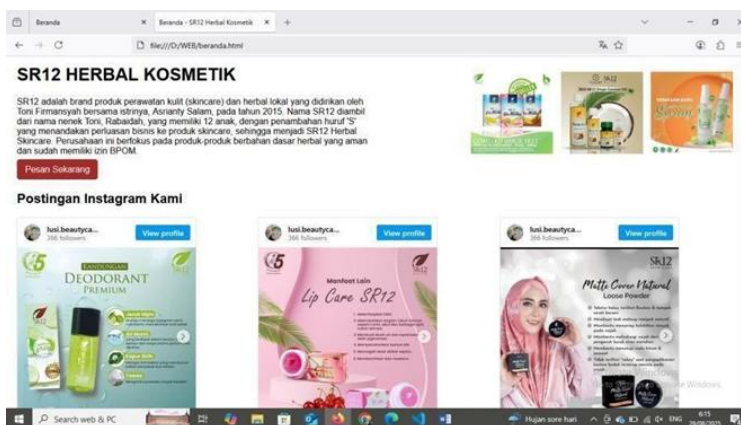


Figure 2. Home Page

Statistics Page, the Statistics Page presents Instagram content performance data in numerical form, including reach, engagement rate, number of posts, posting date, content title, content type, and content schedule reminders. Its purpose is to assist the marketing team in monitoring digital campaign results and making data-driven decisions. The testing results show that all statistical elements are displayed successfully.



Figure 3. Statistics Page

Content Management Page, the Content Management Page allows administrators to upload, edit, save drafts, and schedule posts from a single interface. Its purpose is to provide convenience in managing all publication materials in one centralized location. The testing results show that the upload, save draft, and post scheduling features function according to the system design. Any changes made are immediately reflected in the content list.

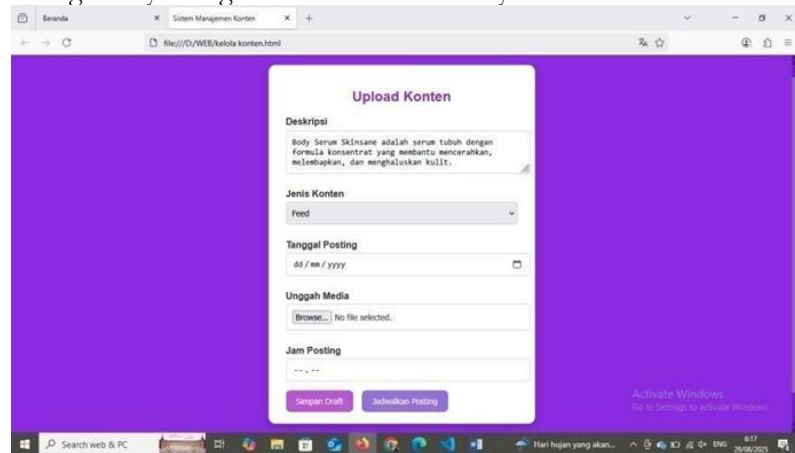


Figure 4. Content Management Page

Post Scheduling Page, the Post Scheduling Page enables administrators to schedule content publication by selecting the posting date, upload time, content title, content type, and content status. It also includes edit and delete icons. The purpose of this page is to maintain publication consistency and ensure that content is published when the audience is most active. The testing results indicate that the scheduling feature operates as planned. Scheduled content is successfully published automatically at the specified time.

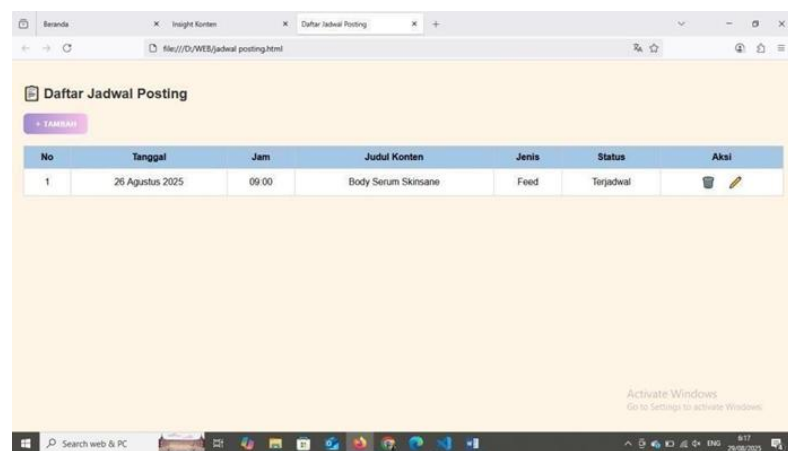


Figure 5. Post Scheduling Page

Content Insight Page, the Content Insight Page displays graphical analytics for each uploaded content item, including the number of views, interactions, and posts within a specific period. Its purpose is to identify the types of content that are most effective in increasing audience engagement. The testing results show that all insight data are displayed accurately according to the selected content.

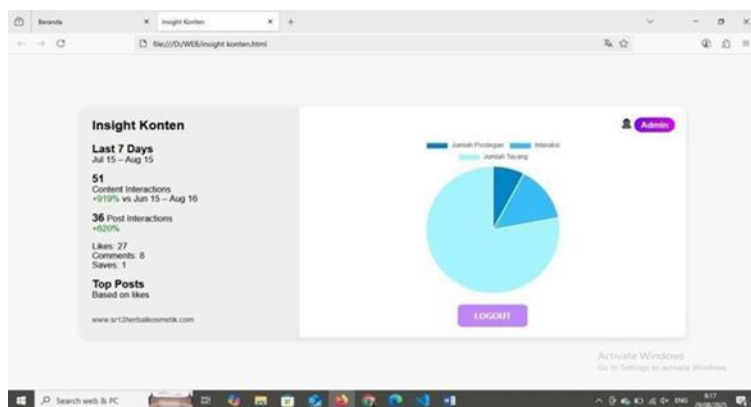


Figure 6. Content Insight Page

Final Test Results

Based on the series of testing processes conducted on each feature of the web-based Instagram Content Management Information System for PT SR12 Herbal Kosmetik, the results indicate that all major system functions operate according to the design specifications. The Home Page successfully displays company information and product images, including a call-to-action button that directs users to the purchasing page. The Statistics Page is able to accurately present content performance data in the form of numerical values and graphical visualizations, while the Content Insight Page displays user interaction analysis without any issues.

The Post Scheduling feature functions as expected, where scheduled content is successfully published at the designated time. The Content Management Page can be used to upload, edit, and delete content smoothly, and the Login Page is capable of correctly validating administrator credentials, thereby maintaining system access security.

Based on these testing results, it can be concluded that the developed system has fulfilled the planned functional requirements and is ready to be utilized in supporting the digital branding strategy of PT SR12 Herbal Kosmetik effectively.

Table 1. Interview Results from the System Design Testing

No.	Name	Question	Interview Result
1	Titi (Main Distributor)	Is the insight information easy to understand?	"Yes, because the graphs and figures are clearly presented."
		Does the insight help evaluate content performance?	"Very helpful, as it allows me to identify which content generates the most interactions."
		Is the insight data displayed quickly and accurately?	"Yes, it appears automatically without long loading times."
2	Lina (East Jakarta Distributor)	Is the insight information easy to understand?	"Yes, but the graph colors should be made more contrasting."
		Does the insight help evaluate content performance?	"Yes, because it provides content comparisons."
		Is the insight data displayed quickly and accurately?	"Fairly fast."

No.	Name	Question	Interview Result
3	Ratna (East Jakarta Distributor)	Is the insight information easy to understand?	"Very easy to understand."
		Does the insight help evaluate content performance?	"Yes, I can determine my next content strategy."
		Is the insight data displayed quickly and accurately?	"Accurate, the data matches what is shown in Instagram Analytics."
4	Diana (Duren Sawit Agent)	Is the insight information easy to understand?	"Yes, even though I am not a technical person, I can still understand it."
		Does the insight help evaluate content performance?	"Very helpful, especially for identifying engagement trends."
		Is the insight data displayed quickly and accurately?	"Quite fast, taking no more than 5 minutes."
5	Desti (Pondok Bambu Agent)	Is the insight information easy to understand?	"Yes, even though I am not a technical person, I can still understand it."
		Does the insight help evaluate content performance?	"Very helpful, especially for identifying engagement trends."
		Is the insight data displayed quickly and accurately?	<i>(Interview response not provided in the source data.)</i>

5. Conclusion

This study successfully designed a web-based Instagram Content Management Information System that meets the needs of PT SR12 Herbal Kosmetik. The developed system provides a solution to content management problems that were previously handled manually and in a less structured manner. The information system includes key features such as content management, post scheduling, data management, and content insights. These features have proven to improve the effectiveness and efficiency of the company's Instagram content management process.

The implementation of this system design supports the company's branding strategy by helping maintain content consistency, strengthening brand identity, and providing relevant analytical data to enhance brand awareness of SR12 Herbal Kosmetik products. Based on the testing results obtained through interviews with users, the system functions properly according to user requirements, is easy to use, and is considered suitable for implementation in supporting the company's digital marketing strategy.

Recommendations

The designed system can be further developed by adding direct integration with the Instagram API, enabling content publication to be carried out automatically and in real time without requiring manual intervention. The existing insight feature can also be enhanced by providing more interactive data visualizations and incorporating additional metrics such as reach, engagement rate, and conversion rate to strengthen marketing strategy analysis.

The company should provide specialized training for administrators and system users to ensure that all features can be utilized optimally and that the system can be operated according to established procedures. For future research, this system can be expanded beyond Instagram and developed to support content management across multiple platforms, including Facebook, TikTok, and YouTube, thereby creating a more comprehensive digital marketing strategy for the company.

In addition, periodic evaluations of system performance are necessary to ensure that the system continues to align with the company's evolving needs and adapts to the constantly changing algorithms of social media platforms.

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