Company Profile Website Development With 360° Interactive Product Features to Improve User Experience on Medical Devices

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Article Info	ABSTRACT
	This research developed an interactive Company Profile Website for DM Medical Alkes to address the lack of digital promotion and corporate credibility. The website integrates an interactive 360° product presentation feature to enhance user experience and buyer confidence. The Agile Development method was employed, which included planning, design (UML, mockups), implementation (Next.js, Supabase), testing, and review phases. An experiment to determine the optimal number of images for the 360° feature was conducted with internal stakeholders, resulting in the use of 36 images. Comprehensive system testing was performed using Black Box Testing, which confirmed that all basic website functionalities operated optimally. User Experience (UX) Testing with the System Usability Scale (SUS) yielded an average score of 80.85 from 41 customers (categorized as "Excellent") and 98.66 from 3 stakeholders (categorized as "Best Imaginable"). Furthermore, a focused questionnaire on the interactive 360° feature showed very positive results, with an average score of 4.0 and a percentage of 80% from 41 respondents (categorized as "Very Good"). These findings prove that respondents prefer the 360° feature over two-dimensional media or videos, and that the feature is effective in enhancing user experience and attracting potential buyers. Overall, the developed website successfully presents information and products effectively, significantly improving user experience and meeting expectations.

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1. INTRODUCTION

In the digital era, the internet has become the primary medium for information dissemination, with websites functioning as accessible portals available continuously. The number of website users in Indonesia increased by 61.6% in 2020, demonstrating the critical significance of online media for business operations and market penetration [1]. Company profile websites have proven to be effective instruments for introducing companies, promoting products, and building consumer trust [2]. To enhance buyer confidence and differentiate offerings in competitive markets, interactive product presentation features have gained prominence. In particular, the 360° interactive product presentation feature has demonstrated superior effectiveness compared to traditional two-dimensional media models, providing consumers with complete control over product information and facilitating comprehensive product comprehension [3]. Within the healthcare industry, where purchasing decisions heavily depend on thorough product understanding and quality assurance, such interactive features become instrumental in enabling consumers to make more informed purchasing decisions and enhance confidence in product selection [4], [5].

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J. of Glob. Engineering Res. & Science　　　　　　　　　　　　　*e*-ISSN: 2830-5418, *p*-ISSN: 2830-5906

Darul Marifat Medical Alat Kesehatan (DM Medical Alkes) operates as a specialized distributor and retailer of medical equipment and healthcare devices. According to Regulation No. 1189 of the Ministry of Health of the Republic of Indonesia in 2010, medical devices are designed to prevent, diagnose, treat, and alleviate diseases while providing patient care [6]. Since its establishment, the company has maintained a strategic focus on providing diverse medical equipment and healthcare devices serving circumcision procedures and hospital and clinic requirements. The product portfolio encompasses diagnostic equipment, patient care medical devices, and laboratory equipment utilized within the medical field, with particular emphasis on modern circumcision methods such as the Neo Alis clamp. Despite its commitment to deliver quality products at competitive prices with satisfactory after-sales service, the company currently lacks a dedicated Company Profile Website for optimal product information dissemination and promotional activities. This absence represents a significant untapped potential in establishing and reinforcing the company's market image and organizational credibility [7]–[9].

Recognizing this gap, this research proposes the development of a comprehensive Company Profile Website featuring an integrated interactive 360° product presentation capability. The 360° feature is designed as a cylindrical panorama, enabling horizontal rotation viewing that allows customers to examine medical equipment from multiple perspectives before making purchasing decisions [7]. Research indicates that cylindrical panorama technology allows for 360-degree horizontal viewing with limited vertical coverage, yet remains highly effective for emphasizing main product features through systematic image arrangement [10]–[12]. The website development adheres to the Agile methodology, incorporating iterative development cycles that enable continuous testing and progressive enhancement. This approach facilitates flexibility in responding to evolving requirements and stakeholder feedback from DM Medical Alkes management [13]. The Agile development approach emphasizes iterative software development with regular testing cycles, continuous stakeholder engagement, and progressive feature implementation, demonstrating particular effectiveness in web application development contexts requiring flexibility [4].

The research addresses two primary research questions: (1) How can a Company Profile Website with an interactive 360° product presentation feature be effectively developed for DM Medical Alkes? (2) How effective is the developed Company Profile Website in presenting company information and products with the integrated 360° interactive feature for enhancing overall user experience? By addressing these questions, this research aims to contribute to strengthened corporate image and market position for DM Medical Alkes while advancing knowledge in the integration of interactive product visualization technologies within web-based company profiles.

2.　METHOD

This research employed the Agile software development methodology with systematic phases encompassing planning, design, implementation, testing, review, and deployment as depicted in Figure 1. The research site was DM Medical Alkes' business operations in Bekasi, West Java, Indonesia, specifically located at Kp. Bojong Tua, Jl. Masjid Al-Ikhlas RT 003/RW 001 Blok B No.18, Pondok Gede. The development team conducted primary data collection through stakeholder interviews and document analysis to establish functional and non-functional requirements [14]. Functional requirements included user registration and login, product catalog browsing, interactive 360° product viewing, product search functionality, contact form submission, and administrative dashboard for content management. Non-functional requirements specified responsive design for multi-device compatibility, performance optimization with loading times not exceeding three seconds, and system security standards in accordance with web application best practices [10]. Two primary actors were identified: customers accessing product information and interactive visualization features, and administrators managing website content, products, and user communications as illustrated in Figure 2.

System design utilized Unified Modelling Language (UML) including use case diagrams depicting actor-system interactions, activity diagrams illustrating process flows, and class diagrams representing system architecture [15]. Prototype mock-ups demonstrated visual design, navigation structure, and feature placement. The interactive 360° feature was designed as a cylindrical panorama viewer enabling horizontal image rotation through mouse or touch interactions. Multiple technology frameworks were evaluated, with Next.js selected for server-side rendering capabilities, Supabase for database management and backend services, and Tailwind CSS for responsive interface design [16]. The website was developed using Next.js framework for server-side rendering and optimized performance, Supabase for database management and backend services, and Tailwind CSS for responsive interface design. The 360° viewer component was custom-developed with state management for image sequencing and user interaction handling, incorporating auto-rotation functionality and touch/mouse interaction detection [16]. An experimental phase determined optimal image quantity for the 360° feature by evaluating perceptual differences between 24, 30, and 36-image sequences with three internal stakeholders. Results indicated 36 images as the optimal balance

between visual quality and loading performance, aligning with research findings that frame rates and image smoothness significantly impact user experience [10].
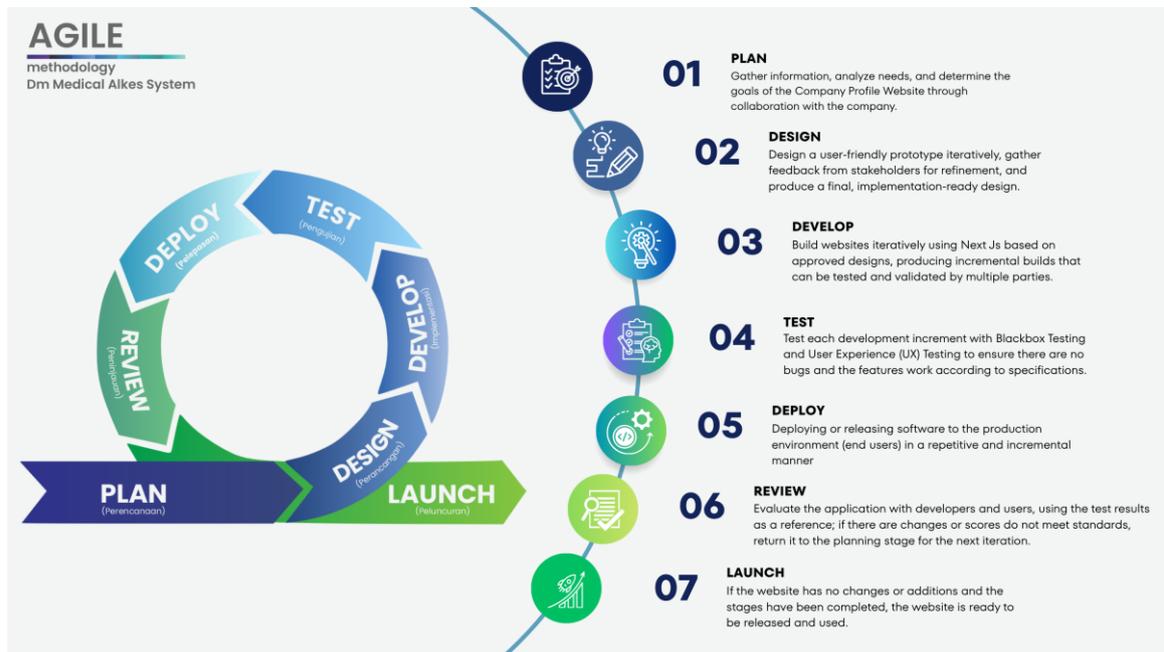

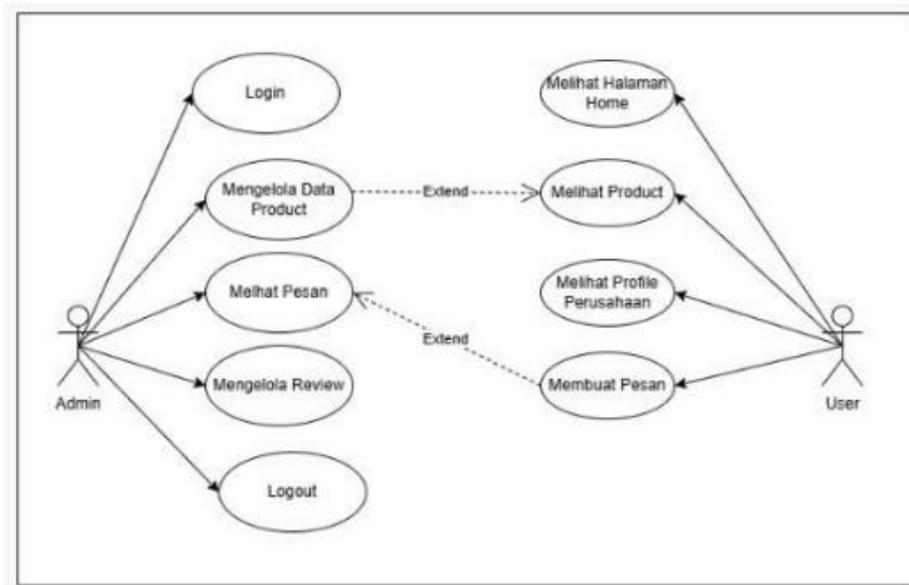Figure 1. Stages of Agile Development

Figure 2. Use Cases for Dm Medical Devices Website

Black Box Testing employing smoke testing methodology verified fundamental system functionalities across administrator dashboard and customer-facing interfaces [17]. System Usability Scale (SUS) assessment was conducted with 41 customers and 3 stakeholders, utilizing the standardized ten-item questionnaire [18]. A focused questionnaire examined specific satisfaction with the 360° interactive feature using a 5-point Likert scale (1=Poor, 5=Excellent). Sampling methodology employed purposive sampling for stakeholder selection and convenience sampling for customer participants drawn from DM Medical Alkes' existing customer database during 2024-2025 [19].

3.   RESULTS AND DISCUSSION

This section describes the results of the tests that have been conducted, including 360° feature experiments and usability testing (SUS).

3.1   360° Feature Experiment Results

The experiment to determine the optimal number of images yielded data averaged across 3 respondents. The results are presented in Table 1 and visualized in Figure 3. The experimental study comparing image quantities (10, 18, 24, 36 images) demonstrated that 36-image sequences achieved the highest user satisfaction scores, with stakeholders preferring this configuration for balancing visual smoothness with system performance. This finding informed the final implementation specification and aligns with research indicating that smooth rotation perception requires frame rates and image sequences optimized for visual comfort [10]. The 36-image configuration was determined to provide the optimal balance between perceptual quality and computational efficiency.

Table 1. Details of Stakeholder Experiment Results

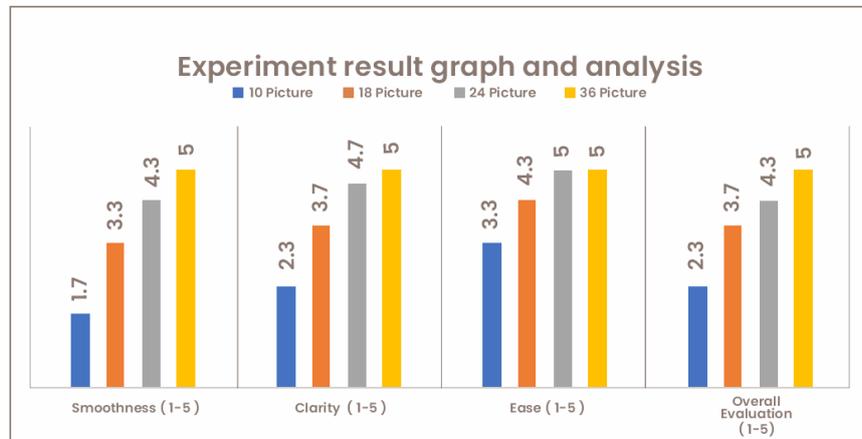| Configuration	Respondents	Smoothness	Clarity	Ease	Overall Evaluation
10 Images	R1 (Technical)	2	2	2	2
	R2 (Product)	1	2	1	2
	R3 (Marketing)	2	3	3	3
18 Images	R1 (Technical)	3	2	3	3
	R2 (Product)	4	4	4	4
	R3 (Marketing)	3	4	3	4
24 Images	R1 (Technical)	4	4	4	4
	R2 (Product)	5	5	5	5
	R3 (Marketing)	4	4	4	4
36 Images	R1 (Technical)	5	5	5	4
	R2 (Product)	5	5	5	5
	R3 (Marketing)	5	5	5	5

Figure 3. Average Result Graph of Experiment Data

Based on that data, the 36-image configuration was chosen as the optimal standard. While the 24-image configuration already yielded good results, the jump in scores at 36 images represents a significant premium in quality. This drastic improvement in user experience is considered more valuable than any potential decrease in perceived loading speed.

3.2   Black Box and System Usability Scale (SUS) Test Results

Black Box Testing confirmed successful implementation of all functional requirements with no critical failures. All login, product browsing, 360° viewing, search, contact submission, and administrative functions operated according to specifications [17]. Besides, the SUS results are depicted in Figure 4, which focused on examining the 360° interactive features. It resulted an average score of 80.85 from 41 respondents (80% positive response rate), categorized as "Excellent". Respondents significantly preferred the interactive 360° feature compared to traditional two-dimensional product imagery or video presentations, confirming its effectiveness in enhancing product visualization and purchasing confidence [3]. The strong preference for

interactive panoramic presentation aligns with research findings demonstrating the superiority of 360° visualization compared to static imagery in user engagement and product comprehension [3].
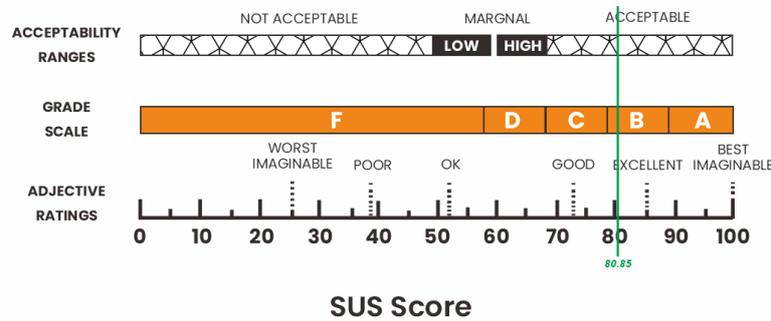

Figure 4. SUS score assessment (Customer)

Meanwhile, the achieved SUS scores of 98.66 (stakeholders) demonstrate that the developed website successfully exceeds usability standards for professional web applications (Figure 5). The notably higher stakeholder score reflects their intimate familiarity with organizational requirements and acknowledgment that the system effectively addresses identified business needs. The substantial difference between customer and stakeholder scores may reflect varying levels of familiarity with web interfaces and different evaluation criteria [18].
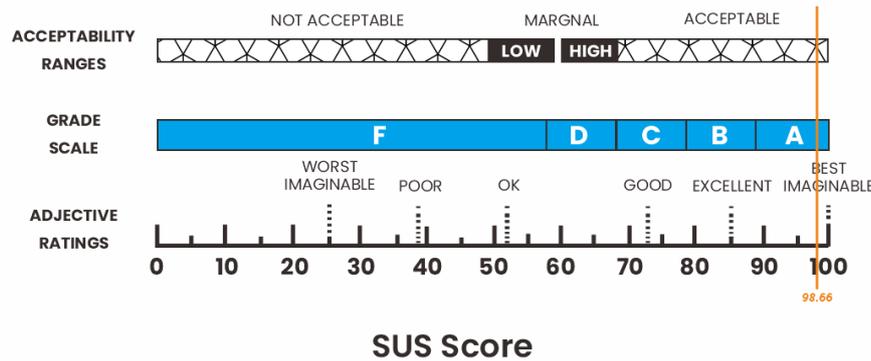

Figure 5. SUS (Stakeholder) score assessment

3.3   Final Implementation Results

Based on the test results, the final website was developed with 360 features using 36 images. The resulting interface proved functional and well-received, as seen on the product page in Figure 6. The 360° feature assessment results validate the research hypothesis that interactive panoramic product visualization significantly enhances user engagement and purchasing confidence compared to static imagery. The 80% positive response rate for the interactive feature indicates strong market acceptance and preference for this technology within the medical equipment sector. This aligns with prior research demonstrating that virtual tour and panoramic visualization technologies substantially improve marketing effectiveness and consumer engagement [3].

The website successfully consolidates company profile information, product catalog, and interactive presentation capabilities within an integrated platform. The Agile development approach facilitated progressive refinement through stakeholder feedback and iterative testing, resulting in a solution closely aligned with organizational requirements and user expectations [4], [13]. The implementation of responsive design ensures accessibility across multiple device types and screen sizes, addressing the need for mobile-first design in contemporary web applications [16].

The medical equipment industry context validates the particular relevance of this research, as healthcare purchasing decisions require thorough product understanding and technical knowledge that interactive presentation features can effectively facilitate [20]. The regulatory compliance with medical equipment classification standards and emphasis on product safety information presentation aligns with industry

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J. of Glob. Engineering Res. & Science   *e*-ISSN: 2830-5418, *p*-ISSN: 2830-5906

requirements [6]. The successful integration of business development processes with interactive technology creates a comprehensive digital transformation strategy for DM Medical Alkes.
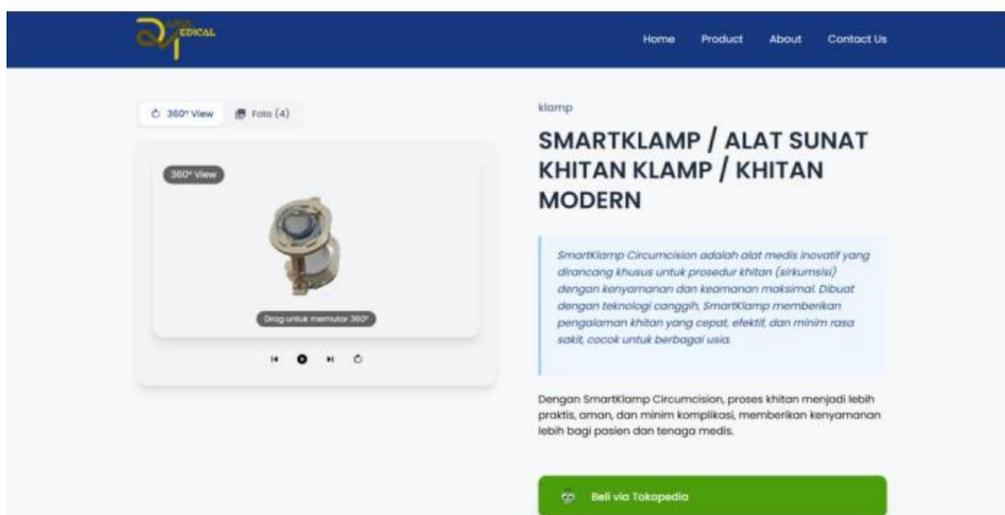

Figure 6. Product Page With 360° Integration

4.   CONCLUSION

This research successfully developed an interactive Company Profile Website for DM Medical Alkes using Agile Development methods. Internal experiments determined that 36 images were the optimal number for the 360° feature, providing the best visual experience. Black Box testing ensured all basic functionality was working normally. User Experience testing with the System Usability Scale (SUS) resulted in an average score of 80.85 from 41 customers (category "Excellent") and 98.66 from 3 stakeholders (category "Best Imaginable"). A specific questionnaire on the 360° feature also received a "Very Good" response (average score of 4.0), proving this feature is effective in improving user experience and attracting buyers. Overall, the developed website successfully presented information effectively and significantly improved user experience.

Future research directions include implementing augmented reality capabilities for enhanced product visualization and three-dimensional product rotation, developing personalized product recommendation systems based on user behavior analysis and machine learning algorithms, and expanding the 360° feature to include vertical panorama viewing capabilities for comprehensive product examination. Additionally, advanced analytics implementation would provide insights into user interaction patterns and product popularity metrics to inform inventory and marketing strategies. Integration with customer relationship management (CRM) systems would enable more sophisticated customer engagement and sales pipeline management.

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