KnE Social Sciences | The 4th International Conference on Science, Mathematics, Environment, and Education | KnE Publishing

Research Article

The Development of Company Profile Information System Using User-centered Design Approach

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Abstract.

The company profile information system is widely used to introduce the company to the targeted customers. This information system presents information about the services provided and the advantages of the company. The user-centered design (UCD) method is applied to ensure that the design of the system meets user needs. The object of this study is PT. Mitra Daya Electrindo, an electrical installation service contractor company. This study aims to produce an information system that presents the company profile in a more attractive and accessible way. The development of this research information system uses the waterfall method, consisting of analysis, design, development, testing, and maintenance. The UCD method of discovering requirements, designing solutions, prototyping, and evaluation is applied at the analysis and design stages. Based on the identification of user requirements, it was found that the company's customers are classified as novice users, and the prototype was made based on this user persona. The single ease question (SEQ) score of the prototype test was 6.2, which showed that the information system was easy to use and user-friendly for web visitors. This interface was developed into an information system using PHP and CSS programming languages, and the database uses MySql. The information system can display information about the services provided and allow the admin to log in and manage the company's data.

Keywords: company profile information system, company profile, user centered design (UCD), interface, prototype

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Published 27 May 2025

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the ICoSMEE 2023 Conference Committee.

1. INTRODUCTION

Companies that wish to survive and grow in the digital era must be able to leverage information technology to improve the efficiency, effectiveness, and quality of services offered to customers. One way to achieve this is by developing an information system capable of displaying a comprehensive company profile. A company profile can help customers and potential partners understand the products and services offered and build a professional image of the company (Alda, 2023). This company profile information system replaces the conventional methods of conveying information with an IT-based approach, thus expanding the marketing reach of products or services (Yellonita, Nugroho, & Maheni, 2023).

PT. Mitra Daya Electrindo (MDE) is an electrical installation service contractor operating in the electrical services sector. The company provides installation services for new electrical setups in homes, offices, schools, and other locations. MDE requires an information system capable of presenting company information in a structured, interactive, and easily accessible manner to the public. Until now, information related to the company profile, services, and completed projects has been communicated through limited and less integrated conventional methods. This has the potential to hinder information access for prospective customers or partners seeking more detailed information about the company.

Generally, people who seek electrical installation services are adults in the productive age range (25-50 years). They could be homeowners, entrepreneurs, or professionals in the construction and property sectors. The individuals accessing information on electrical installation services are mostly male, although it is also possible that females may need this information. A company profile information system needs to be effectively designed to meet these user needs. Therefore, the User-Centered Design (UCD) method is applied in developing this information system to ensure its content aligns with user needs (Hasani, Santoso, & Isal, 2019). UCD is a system development method that focuses on the end-users, where each design stage involves the users (Ahyati & Novyanti, Desain Media Pembelajaran Keamanan Digital Untuk Pelaku UMKM dengan Metode User Centered Design (UCD), 2023) to ensure the system meets user needs, preferences and is easy to use. Applying UCD in user interface design will result in an attractive design and easy access to information (Ahyati, et al., 2024), making it well-suited for web-based company profile information systems.

The UCD method has already been applied by Setiawan in designing the website interface for PT. Samudera Biru (Santoso, Putra, & S, 2021). Using this method, the proposed interface design could be implemented in the company. However, that study did not explain the evaluation method used, making it impossible to measure how useful the website was for users. Putra (Setiawan & Permana, 2023) and Yaseer (Putra, Nirmala, & Paramitha, 2021) also used the UCD method to develop company profile websites. In their research, the evaluation phase was measured using the User Experience Questionnaire (UEQ) method. Their studies resulted in a website that was useful for users and motivated them to use it. This research differs from previous studies as it uses the Single Ease Question (SEQ) metric during the evaluation phase. SEQ is effective for measuring the quality of the proposed interface design (Yasser, 2024) without burdening users when providing feedback.

By applying UCD, the MDE company profile information system is expected to be built optimally, providing a better user experience, enhancing the company's image, and supporting business growth by reaching a wider market. This study aims to design and develop company profile information using the UCD method for its user interface design, whereas the system development uses the waterfall method.

2. METHODOLOGY

The system development method used in this research is the waterfall method. The waterfall method follows a structured and sequential workflow in software development. This method is used because the system requirements are clear and will not change much during the development process. According to Pressman (2012), the waterfall stages consist of requirements analysis, design, implementation, testing, and maintenance (Sova, Makmun, & Tasliza, 2024). In the design stage, the User-Centered Design (UCD) approach is applied. The UCD stages in this research include identifying requirements, designing alternatives, making prototypes, and evaluating.

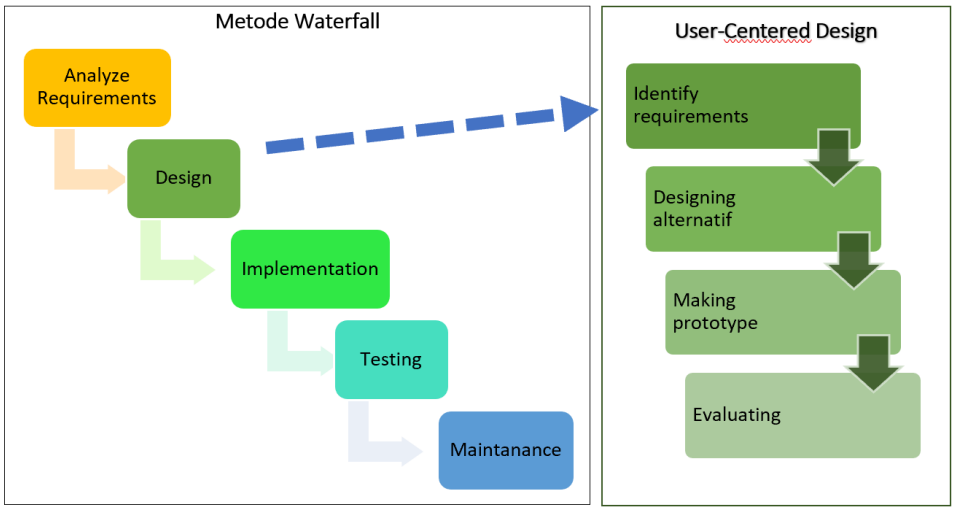

Figure 1: Research method.

The stages in this research are:

1. Analyze Requirements

Requirements analysis is conducted through interviews and observations. Interviews were carried out with the owners and employees of PT. Mitra Daya Electrindo (MDE) to gather information about the desired company profile, their business processes, customer profiles, etc.

2. Design

In this phase, the team designs the system architecture, software design, database design, and interface design. The interface design applies UCD, which consists of:

a. Identify Requirements

The process of identifying users who will use the application, namely customers or potential customers of MDE. This stage is conducted simultaneously with the Analyze Requirements stage of the waterfall method, using the same approach, i.e., interviews and observations. The output of this stage is a flowchart and personas that reflect the characteristics and needs of the users.

b. Designing Alternatives

Based on the personas and user process flow, this stage designs an appropriate interface.

c. Making Prototype

At this stage, a clickable prototype is created using Figma. The produced prototype is expected to provide design experience and the experience of using the company profile.

d. Evaluating

This stage involves evaluating the design to determine whether it meets the users' expectations. Usability testing is conducted by presenting the interface design and providing scenarios of activities that users must perform. The goal of this testing is to determine whether the created prototype can solve the problem and meet user needs. The metric used is the Single Ease Question (SEQ).

3. Implementation

The system development implementation uses HTML, PHP, and CSS programming languages accompanied by a MySQL database.

4. Testing

The information system testing stage is implemented using the black box testing method.

5. Maintenance

This stage involves the modification process to improve output, fix errors, and enhance performance and quality. System maintenance for the company profile is managed by an admin from MDE as the data manager.

3. RESULTS AND DISCUSSIONS

A. Analyze Requirements

At this stage, the analysis of the weaknesses of the old system and the system requirements analysis were carried out. The analysis of the old system's weaknesses used the PIECES method, with the most highlighted aspect being performance. The old system relied on distributing information through conventional media such as brochures, catalogs, and direct communication via WhatsApp, email, or phone calls. This caused slow access to information, as potential customers had to wait for a response from the company to get the information they needed. Moreover, the lack of integrated information on a single platform meant users had to search for data from various separate sources, which was inefficient. Users also could not explore the products and services offered, as well as the projects that had been undertaken, in more detail.

The new system developed is a structured and integrated web-based information system, where all information related to the company profile, services, past projects, and contact details can be accessed on a single platform. Using the UCD (User-Centered Design) approach, the navigation structure and content will be designed based on user needs and habits to ensure ease of access and user-friendliness.

The system requirements analysis consists of functional requirements analysis and non-functional requirements analysis. The functional requirements for the company profile, based on its users, are as follows:

1. Admin: can manage company service data, company profile data, company photo gallery, and past project data.

2. Website visitors: can view service, view company profile, view company photo gallery, and view past projects.

The non-functional requirements for the company profile information system are as follows:

1. Hardware: A computer with a minimum specification of Intel Core i3 Processor, 4 GB RAM, 500 GB Hard Drive, along with a mouse and an internet connection.

2. Software: Operating System of at least Windows 8, Visual Studio Code, Xampp with PHP version 8.0.12, and a web browser.

B. Design

At this stage, data flow design, database design, and interface design are carried out. The data flow design is illustrated using a Data Flow Diagram (DFD). The DFD of the company profile information system can be seen in Figure 2.

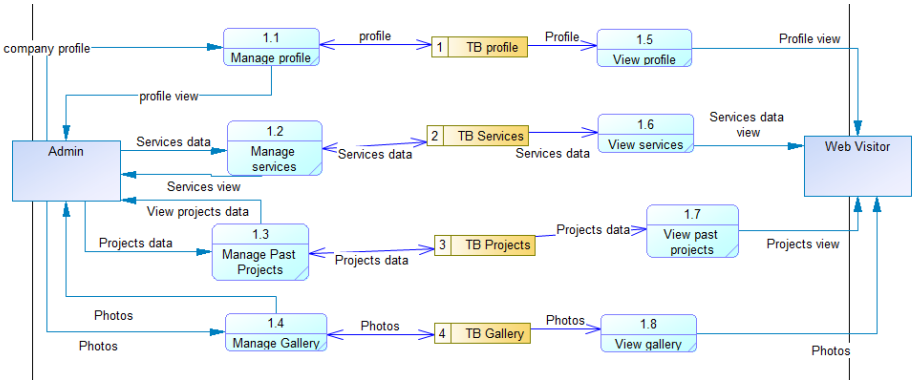

Figure 2: Data flow diagram company profile.

For interface design, the implementation of the UCD method is as follows:

a) Identify Requirements

The initial stage of identifying the interface requirements to be designed is determining user criteria. The participant criteria in this research are as follows: 1) Age: 20-50 years, both male and female, 2) Psychographics: having an active lifestyle in seeking quick and easy information through digital platforms, 3) Behavior: requiring quick access to specific information about the company without extensive navigation. Five participants were involved at this stage and were interviewed with pre-prepared questions. The next step was to create a user persona based on the collected data. The user persona can be seen in Figure 3.

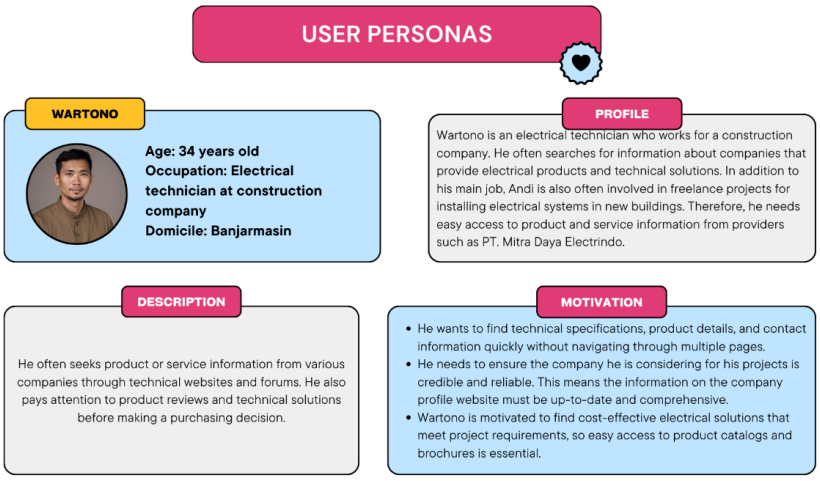

Figure 3: User Persona for Information System Company Profile.

b) Designing Alternatives

This stage involves designing the information architecture and wireframe. The information architecture for the web visitor interface can be seen in Figure 4.

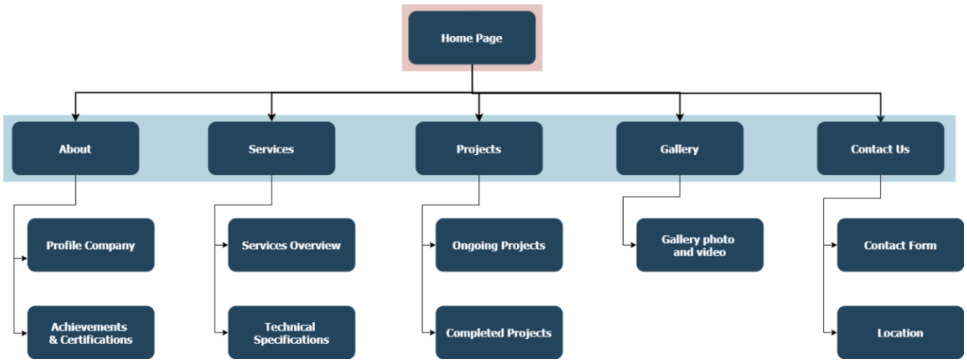

Figure 4: Web visitor information architecture.

c) Making Prototype

In this stage, a clickable prototype was created using Figma. The prototype uses blue as the primary color, this color based on the company's logo, which predominantly features this color. This also serves the purpose of company branding. The font used is Montserrat, a sans-serif family font known for its simplicity, elegance, and high readability. The prototype was designed by applying interface design principles, resulting in an interface that meets user needs. Figure 5 shows the company profile prototype.

d) Evaluating

At this stage, usability testing was conducted using the interview method. Five participants were asked to complete several scenarios. There were four scenarios that users needed to carry out, with the following goals: 1) Visitors can obtain information such as vision, mission, structure, and about the company, 2) Visitors can order services from the web page, 3) Visitors can view information about past projects, and 4) Visitors can view the photo and video gallery. The metric used in this usability testing was the Single Ease Questions (SEQ). The average SEQ score for the scenarios completed by users was 6.2. This result indicates that the information system is easy for web visitors to use, due to the choice of comfortable-to-view colors, clear and readable information display, and a layout that is easy to understand and access. Consequently, users can easily find the information they need without difficulty. However, the text still needs additional spacing between letters to improve readability. Suggestions and feedback from participants during the evaluation served as references for improving the prototype before moving to the implementation stage.

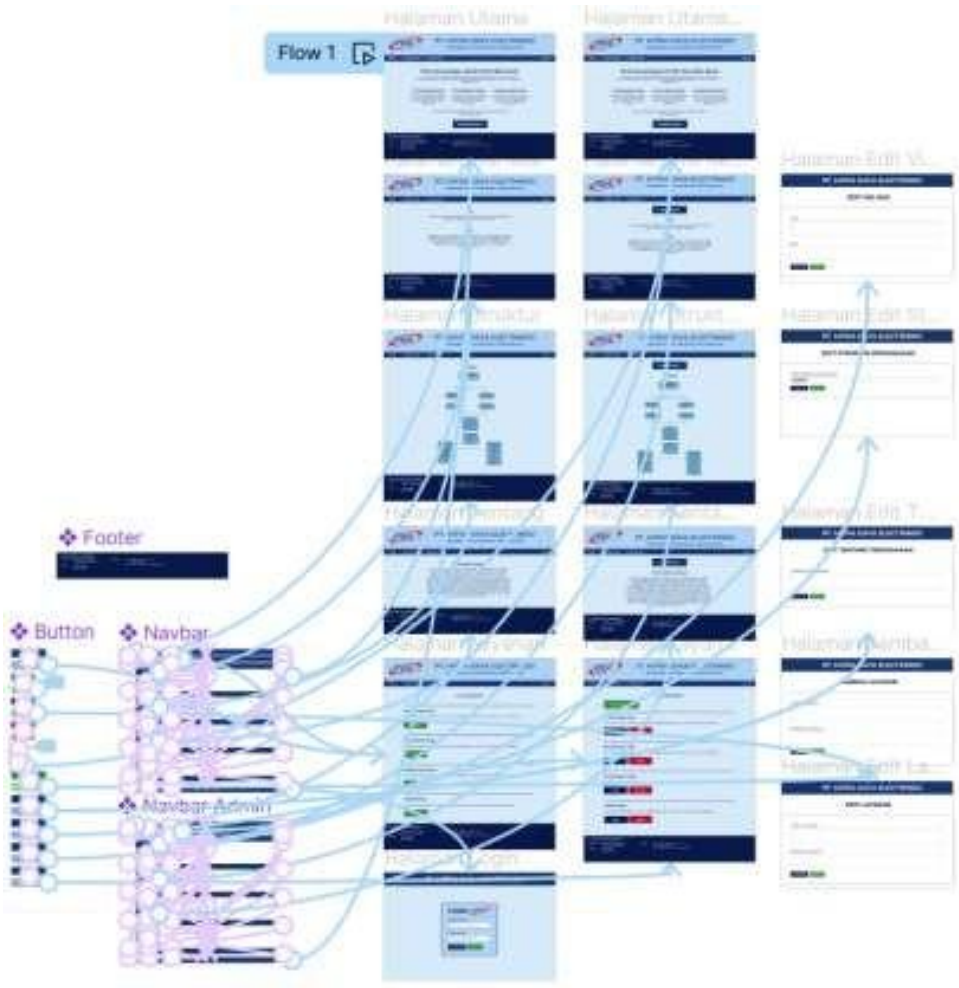

Figure 5: Company profile prototype.

C. Implementation

At this stage, the interface design was developed using the PHP and CSS programming languages, with the database managed using MySQL. Figures 6 and 7 show the web-based company profile information system pages for MDE.

D. Testing

In this phase, the information system was tested to determine whether its functionality met the system requirements. The method used for this stage was black box testing, focusing on the application's functionality, particularly its inputs and outputs. The testing results showed that the developed company profile information system functioned as expected, both for admin users managing content and for web visitors accessing company information. This method succeeded in creating a web-based system that was not only functional but also user-friendly.

Figure 6: Home Page.

4. CONCLUSION

This research applied the User-Centered Design (UCD) method to design the interface of the Company Profile Information System, aligning it with user needs. The results of the prototype evaluation showed that the information system was easy to use and user-friendly for web visitors. The design was then developed using PHP and CSS programming languages, along with a MySQL database, to become a fully functional Company Profile Information System. The system operated as expected, both for admin users managing content and for web visitors accessing information. In conclusion, this method succeeded in creating a web-based system that is not only functional but also user-friendly. For future research, regular usability testing should be conducted, and user experience measurements should also be implemented. This will help identify areas with potential for improvement and adapt to changing user preferences.

ACKNOWLEDGMENTS

We express our gratitude to Politeknik Negeri Banjarmasin through the Departemen of Informathics Management. We also extend our thanks to all parties such as: PT.

Figure 7: Services Page.

Mitra Daya Electrindo and all the participants who have contributed to the successful completion of this research.

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