

# Website Design Tax Consulting Services with Agile Method

Vincent Colin<sup>1\*</sup>, Wilson<sup>2</sup>, Herman<sup>3</sup>

<sup>1,2,3</sup>Dept. of Information Technology, STMIK TIME

[vincentcolinn@gmail.com](mailto:vincentcolinn@gmail.com)<sup>1\*</sup>, [wu95.wilson@gmail.com](mailto:wu95.wilson@gmail.com)<sup>2</sup>, [hrman\\_ang@yahoo.com](mailto:hrman_ang@yahoo.com)<sup>3</sup>

## Abstract

The advancement of information technology has driven the transformation of tax services into digital platforms, enabling the public to access tax consultations practically without time and location constraints. This study aims to design a web based information system for tax consultation services that is user-friendly, efficient, and accessible across multiple devices. The design process applies the Agile method, allowing iterative adjustments according to user needs. The website is developed with a simple interface for easy access without additional installations, while also considering efficiency, speed, and data security. The design results show that this information system can provide a more adaptive tax consultation solution, improve service quality, and simplify public access to tax information digitally.

**Keywords:** System Design, Website, Tax Consultation, Agile Method

## 1. Introduction

In today's digital era, online activities have become an integral part of everyday life, including in tax consultation services that were previously conducted only through face-to-face meetings. Technological advancements, particularly the internet and websites, have made it possible for these services to be accessed efficiently anytime and anywhere, providing added value to users in terms of convenience, efficiency, and flexibility. Websites function as a medium for delivering information, continuously evolving toward better quality [1].

In Indonesia, the growth of online-based usage has also experienced a significant surge, especially since the COVID-19 pandemic, which prompted society to shift to online services as a safe and practical solution [2]. In this context, the design of an information system in the form of a tax consultation service website aims to facilitate users in accessing services such as SPT consultations and tax information through a simple and user-friendly interface. To support the development of this website, the Agile method is used, allowing the development process to be more adaptive to changing needs and user feedback [3]. This method is expected to produce a more responsive and high-quality system. This research is conducted at the tax consulting office "Dr. Tax," focusing on the design and implementation of a website based on Agile methodology to improve the efficiency of tax consultation services [4].

### 1.1. Definition of Tax

Tax is a mandatory contribution that must be paid by individuals or entities to the state, which is coercive based on law, without direct compensation, and used for state interests to achieve the greatest prosperity of the people (Law Number 28 of 2007). In Indonesia's taxation system, there are several main types of taxes, including Income Tax (PPH), Land and Building Tax (PBB), and Value-Added Tax (VAT/PPN) [5].

### 1.2. Software Engineering

Software engineering emerged in the 1960s as a response to the software crisis caused by the development of third-generation computers. As the demand for more complex software increased, the cost of software development became higher than that of hardware. Therefore, a more structured and measurable approach was needed in software development [6].

#### 1. Waterfall Method

The Waterfall method is a linear and sequential software development model. Each stage must be completed before the next stage begins, similar to a waterfall flow. The phases in this method are as follows:

- a. Requirement Analysis – Collecting data and defining user requirements.
- b. Design – Designing the software architecture and system components using UML and ERD diagrams.
- c. Implementation – Converting the design into program code.
- d. Testing – Testing the functionality and logic of the software.
- e. Maintenance – Fixing errors and updating the software after it is deployed [7].

#### 2. Incremental Method

The Incremental method builds the system gradually in increments. Each phase or added feature is tested and released once completed. In each increment, user feedback is used to improve and adjust the developed features. The stages in the Incremental method are as follows:

- a. Requirement Analysis – Identifying the system requirements that must be fulfilled.

- b. Design & Development – Creating the system design and developing code based on that design.
- c. Testing – Conducting tests to ensure that the developed features function properly.
- d. Implementation – Installing and configuring the developed system [8].

### 3. Agile Method

The Agile method is a software development approach that emphasizes flexibility and collaboration. Unlike the Waterfall model, Agile uses short development cycles known as sprints. Each sprint produces a functional part of the software that is tested and evaluated. The stages in the Agile method are as follows:

- a. Project Planning – Identifying the system's objectives and scope, and planning the first sprint.
- b. Requirement Gathering – Conducting interviews with stakeholders to determine system requirements.
- c. Sprint Design – Preparing wireframes or early prototypes of the system based on the identified requirements.
- d. Implementation – Developing and implementing the features planned for the sprint.
- e. Testing – Testing the developed features to ensure they function correctly.
- f. Evaluation and Feedback – Evaluating the sprint outcomes and refining plans for the next sprint [9].

### 1.3. Definition and Development of Websites

A website is a collection of pages under a domain that can be accessed by internet users through search engines. These pages typically contain images, text, illustrations, videos, or other types of content depending on the subject matter [10]. Websites can be created and managed by individuals, groups, businesses, or organizations for various purposes. However, merely having a website is not enough to deliver maximum value; proper management with consistent and ongoing content updates is essential to ensure the website remains communicative and informative.

Websites can be categorized based on their nature or structure as follows:

1. Dynamic Website – A website whose content is frequently updated or changed. It typically uses programming languages such as PHP, ASP, or .NET and utilizes databases like MySQL. An example of a dynamic website is a news site or article portal such as [www.artikel.com](http://www.artikel.com).
2. Static Website – A website whose content rarely changes. It usually uses HTML and does not involve databases. Examples include organizational profiles or personal portfolios [10].

Additionally, websites can also be classified based on their function:

1. Personal Website – Contains personal information about the individual user.
2. Commercial Website – Used by companies with a focus on business purposes.
3. Government Website – Owned by government institutions, generally aimed at providing public information and services.
4. Non-Profit Organization Website – Operated by non-profit organizations that are not financially profit-oriented, often aimed at social or humanitarian causes.

With the continuous advancement of technology and the internet, websites have become essential tools in nearly every aspect of life—from personal needs to business and social activities [10].

### 1.4. Framework

A framework is a structured foundation used to build and develop software applications. It provides reusable components that help developers complete tasks more quickly and efficiently [11]. Some commonly used frameworks include:

1. Bootstrap Framework  
Bootstrap is a front-end framework that combines CSS and JavaScript. It enables the rapid, easy, and free development of responsive websites. The term "responsive" refers to the website's ability to automatically adjust its layout and content based on the screen size of the device being used, such as smartphones, computers, or tablets [12].
2. Laravel Framework  
Laravel is a free, open-source PHP web framework created by Taylor Otwell. It is designed for developing web applications using the model-view-controller (MVC) architectural pattern. Laravel offers various features, including a modular system for managing components, a distinct approach to accessing relational databases, and utilities that simplify application deployment and maintenance [13].

## 2. Main Body

### 2.1. System Design Analysis

The website design approach in this study adopts the Agile system development method, which is a part of the Software Development Life Cycle (SDLC). The reason for using this method is its flexibility in accommodating changing user requirements throughout the development process, allowing the resulting system to be more relevant and aligned with user expectations. The Agile method emphasizes several core principles as follows:

1. Short and Planned Iterations – Development is carried out in structured, short iteration cycles. Each iteration allows for periodic evaluation of results, enabling continuous adjustment and improvement before moving on to the next stage.
2. Collaboration with Consultants and Prospective Users – The development process involves active collaboration between the researcher, tax consultants, and prospective users. This collaboration aims to gather direct input regarding system requirements so that the development outcome meets expectations.
3. Focus on Functional Outcomes – Each iteration is targeted to produce components or features that are functional and ready for use. This approach ensures that every stage of development delivers direct added value to users.

4. Adaptation to Change – The system is developed using a flexible approach that is open to change. Any emerging requirements during the development process can be accommodated quickly and efficiently without disrupting the overall project flow.

## 2.2. System Design

The design stages of the Tax Consultation Service Website will follow the iterative cycle of the Agile method. The design process will include the following stages:

1. Concept / Initiation – In this stage, system requirements will be analyzed through in-depth discussions with relevant parties, including tax consultants and website users. The outcomes of this phase include:
  - a. First Navigation – Displays the homepage containing introductory information about the brand, a chat feature, and the office location integrated with Google Maps.
  - b. Second Navigation – Displays the services page, showcasing the types of services offered along with their pricing, consultant options, and a section where users can directly submit feedback and comments.
  - c. Third Navigation – Displays the latest news related to taxation, enabling users to stay updated with current tax information in Indonesia.
  - d. Fourth Navigation – Features a tax calculator that links directly to the official “Tax Calculator | Directorate General of Taxes” website for accuracy and reliability.
  - e. Fifth Navigation – A login page that allows administrators to manage data, and consultants to log in and respond to user inquiries.
2. Iteration Planning, The design process follows an Agile approach that emphasizes iterative development. Each iteration (sprint) is designed to produce testable and usable features. The breakdown of each iteration is as follows:
  - a. First Iteration – Development of the basic public-facing pages: homepage, services, news, and news detail, with a duration of 2 weeks. The objectives include:
    1. Developing the basic website layout for the homepage and services section based on the prepared wireframes.
    2. Creating the news section and detailed news page based on the existing wireframes.

Testing includes:

1. Verifying that the website runs properly without errors.
2. Ensuring proper linkage and navigation between pages.

- b. Second Iteration – Development of the location page integrated with Google Maps and the login feature, with a duration of 2 weeks. The objectives include:
  1. Displaying consultant locations by integrating Google Maps into the website.
  2. Creating a login feature for administrators to access the CMS (Content Management System).
- c. Third Iteration – Designing a live consultation feature connected to Firebase and developing the CMS interface, with a duration of 2 weeks. The objectives include:
  1. Developing a real-time consultation page that functions effectively between users and consultants.
  2. Designing a CMS page for administrators to manage data, including adding, editing, and deleting records.

Testing includes:

1. Testing the chat box functionality to ensure messages can be sent and received correctly.
2. Verifying that the admin page operates correctly after a successful login without any errors.

- d. Fourth Iteration – Refining the UI/UX and enhancing additional features, with a duration of 2 weeks. The objectives include:
  1. Improving the user interface and user experience to ensure ease of use and user comfort.
  2. Optimizing system performance to ensure responsiveness across various devices including desktop, tablet, and mobile.

Testing includes:

1. Gathering feedback from stakeholders regarding usability and navigation.
2. Conducting performance tests on mobile, desktop, and tablet devices.

- e. Fifth Iteration – Security testing and preparation for deployment, with a duration of 3 weeks. The objectives include:
  1. Completing all features and conducting a thorough system-wide testing of the website.
  2. Ensuring robust security measures are in place.

Testing includes:

1. Testing all features to ensure there are no remaining errors or performance issues.
2. Verifying cross-device and cross-browser compatibility.

### 3. Design and Prototype

The website design is created to produce a prototype that meets user requirements, including:

- a. Creating wireframes to determine the layout of elements on each page.
- b. Designing a responsive and visually appealing user interface that aligns with the theme of tax consulting services.
- c. Adjusting the prototype based on feedback from stakeholders to ensure the final design and website meet expectations.

### 4. Development

This phase involves implementing the design into actual code using the following technologies:

- a. Frontend – HTML, CSS, and JavaScript are used to build the visual interface.

- b. Backend – PHP is used to process login data and communicate with the server.
5. Testing and Feedback
- The website undergoes repeated testing to ensure that system functions work as intended. This testing process aims to verify:
- a. The login form processes data correctly.
  - b. The website displays responsively across various devices, including desktops/laptops, tablets, and smartphones.
6. Delivery and Review
- After the final iteration is completed, the system will be delivered to stakeholders for a comprehensive evaluation. If the system is deemed to meet the required needs, the website will be ready for deployment and operation.

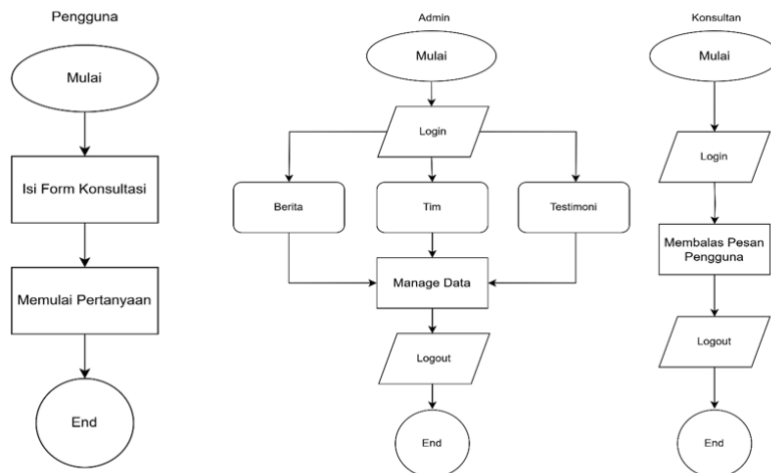


Fig. 1: Flowchart Diagram User, Admin dan Consultant

The flowchart illustrates the process of how the developed website operates. It begins with the user, who simply fills in their personal information in the form provided on the website. After clicking “Start Consultation,” the user is automatically connected to the selected consultant. For the admin, the login function allows access to content management features, such as managing news, team members (consultants), testimonials, and other related content. Meanwhile, consultants only need to log in and will then be directed to the consultant dashboard, where they can respond to messages from users.

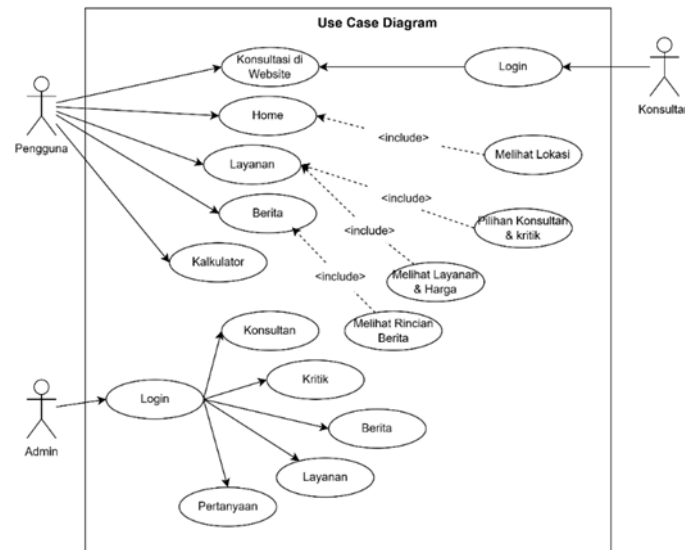


Fig. 2: Use Case Diagram

Based on the illustration above, there are three main actors involved: the user, the admin, and the consultant. Each actor has a specific role. Users can access public pages such as the consultation feature, homepage, services and pricing, news, and the tax calculator. The admin is responsible for managing the website content but must first log in to access the management features. As for the consultant, they only need to log in and will be directly connected to users who send messages to them.

**2.3. Testing Result and Discussion**

This section presents the implementation results of a web-based tax consultation service information system developed to facilitate online interaction between users and tax consultants. The implementation outcomes include the user interface design, consultation process flow,

and key functionalities such as the appointment form, consultant login system, message management using Firebase, and the admin data display. Each feature is accompanied by visual documentation illustrating the alignment between the initial design and the final outcome.

1. Interface Results

Several interface results of the Tax Consultation Service Website are presented as follows:

a. Homepage and Services Display

The homepage includes an introduction to the tax consultant, a consultation feature, Q&A section, and office location integrated with Google Maps. The services page displays the types of services offered, pricing, a list of available consultants, and a form for feedback and suggestions.

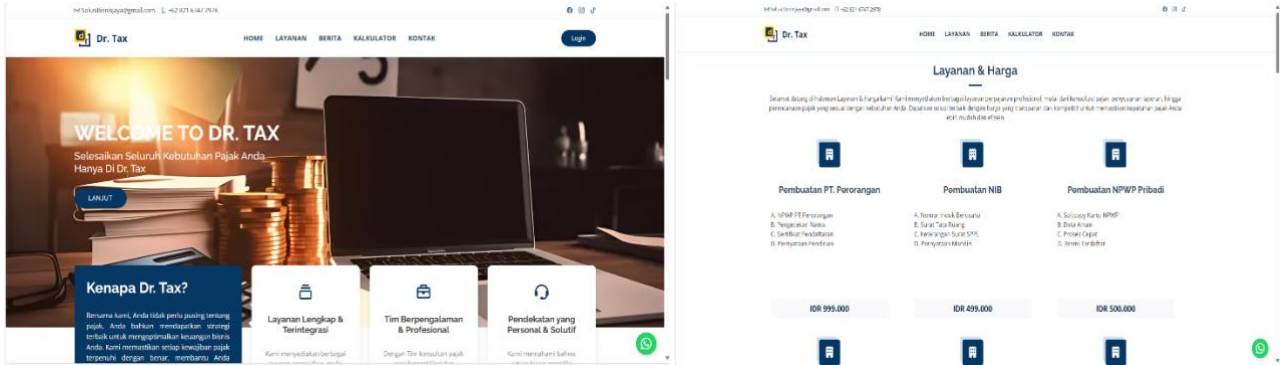


Fig. 3: Homepage and Services Interface

b. News and Login Page Interface

The news page provides the latest information on taxation and allows users to access detailed news content. The login page enables both administrators and consultants to access the system with the appropriate access rights.

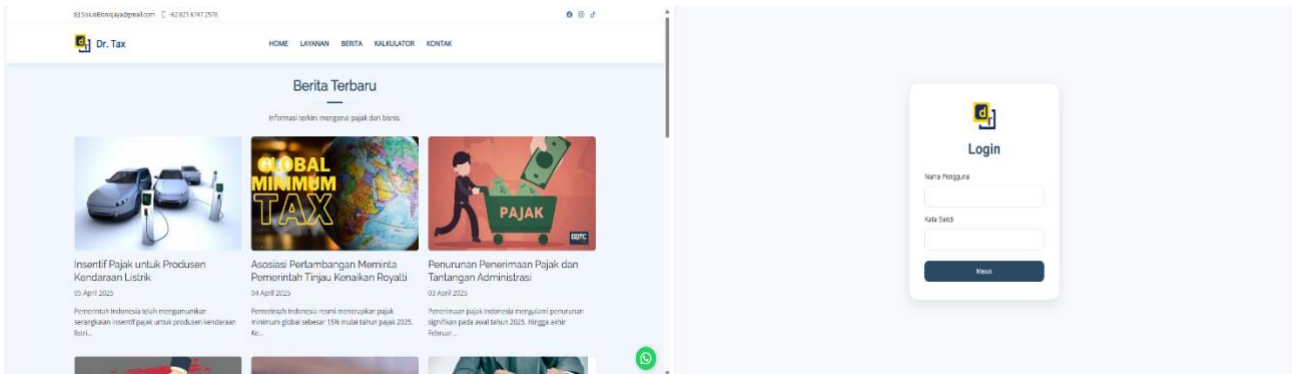


Fig. 4: News and Login Page

c. CMS Page and Consultant Page Interface

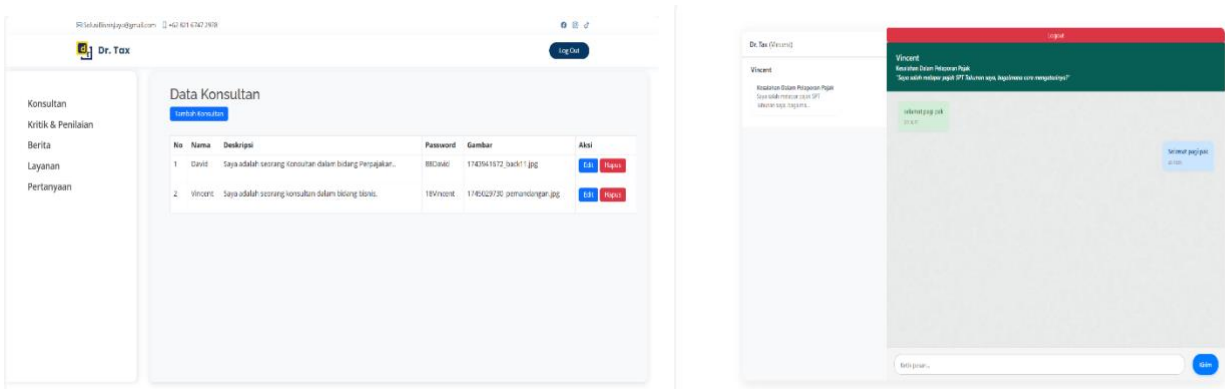


Fig. 5: CMS Page and Consultant Page

2. Discussion

The system was developed using the Agile methodology through five iterations, as outlined below:

a. Iteration 1: Development of Basic Public Pages (2 weeks)

The homepage, services page, and news section were successfully developed, presenting structured and clear information.

- b. Iteration 2: Location Integration and Login System (2 weeks)  
The integration of location features using Google Maps and the implementation of a login system for both admin and consultants were successfully completed.
- c. Iteration 3: Development of Live Consultation and CMS Features (2 weeks)  
The consultation form and CMS were successfully developed; however, the chat feature encountered real-time communication issues when using PHP and MySQL.
- d. Iteration 4: UI/UX Enhancement and Responsiveness (2 weeks)  
The chat feature was successfully integrated using Firebase, and the user interface was improved to ensure responsiveness across various devices.
- e. Iteration 5: Security Testing and System Finalization (3 weeks)  
Comprehensive testing was conducted across multiple devices and browsers, with all features functioning properly and no significant issues encountered.

### 3. Conclusion

The Agile method effectively divides the development process into smaller iterations for gradual evaluation. Key features such as the online consultation form, real-time chat using Firebase, CMS, and dynamic FAQ successfully meet the needs of digital services. Data security is maintained through role-based access control and automatic chat data deletion. Agile supports development flexibility and helps resolve technical issues efficiently. The user interface is responsive and user-friendly across both desktop and mobile devices. The CMS simplifies centralized content and data management for administrators.

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