Design and Build Al-Amin Science Techno Park's Multimedia Web Using the Design Thinking Method

Zulfajri Dhia Ulhaq, Muammar Shaum Agil, Bayu Tri Gautama, Beby Dwianty, Supiyandi

Abstract

Al-Amin Science Techno Park requires a digital medium that can present area information in an interactive, structured, and attractive way. The existing information delivery has not yet fully supported users in accessing news, facilities, area maps, and multimedia documentation efficiently. This study aims to design and build a multimedia website for Al-Amin Science Techno Park using the Design Thinking method. The development process follows the empathize, define, ideate, prototype, and testing stages. The interface is designed in Figma and implemented using HTML, CSS, and JavaScript. The resulting website includes homepage, about us, news, area map, facilities, contact, photo and video gallery, and a 360 virtual tour as the main feature. The development outcome shows that the website can serve as an interactive information medium and support digital promotion of the area. Evaluation with partners and the field supervisor also resulted in revisions so that the final design better matches user needs.

Keywords: *Web, Impact Campus, Multimedia, Al-Amin Science Techno Park, Design Thinking.*

Zulfajri Dhia Ulhaq[1]
[1]Information Technology, Universitas Pembangunan Panca Budi, Indonesia
e-mail: zulfajri11@mahasiswa.pancabudi.ac.id[1]

Muammar Shaum Agil[2], Bayu Tri Gautama[3], Beby Dwianty[4], Supiyandi[5] [2,3,4,5]Information Technology, Universitas Pembangunan Panca Budi, Indonesia
e-mail: muamar.agil@mahasiswa.pancabudi.ac.id[2], bayutriga@mahasiswa.pancabudi.ac.id[3], bebydwianty@mahasiswa.pancabudi.ac.id[4], supiyandi@dosen.pancabudi.ac.id[5]
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Introduction

The development of information technology encourages educational institutions, educational tourism areas, and innovation centers to utilize digital media as a means of delivering information. Multimedia websites are one of the options because they are able to combine text, images, videos, and interactive elements in one medium so that information is easier for users to understand.

Al-Amin Science Techno Park has a variety of information about the area, facilities, and activities that need to be presented in a more attractive way to visitors. In the previous condition, the delivery of information still tended to be limited so that users had to search for information from various sources separately. This situation makes the need for centralized digital media even more important.

In the context of Impacted Campus, the use of digital technology is one of the important strategies in increasing the institution's contribution to society. Multimedia websites can be an effective means of supporting these goals because they can increase the accessibility of information and expand the reach of users.

The Design Thinking method is used in this study because this approach puts the user at the center of the system development process. By understanding the needs of users directly, the resulting system is expected to be more relevant, effective, and easy to use.

This research aims to design and build the Al-Amin Science Techno Park multimedia website as an interactive, informative, and easy-to-use digital information and promotion media.

Literature Review

Multimedia websites are a form of development from conventional websites that integrate various types of media in one platform. The use of multimedia on the website can increase visual appeal and help users understand information more effectively. This is supported by previous research that states that interactive multimedia is able to improve the quality of information communication.

The concept of Campus Impact emphasizes the importance of using technology in supporting academic activities and community service. The website is one of the main media in conveying information widely and sustainably.

Design Thinking consists of the stages of empathize, define, ideate, prototype, and testing. The application of this method to research in Indonesia shows that the process helps researchers understand user needs, form solution ideas, and produce more appropriate interface designs.

In addition, the incorporation of multimedia such as videos and images in the website provides a more engaging and interactive experience. This is an important factor in increasing user engagement with the system. [1]

Research Methodology 1. Research Stages

This research was conducted in the Al-Amin Science Techno Park area which is an integrated area focusing on the development of innovation, research, education, and collaboration. The development of multimedia websites is carried out by following systematic research stages in order to produce a system that is relevant and according to the needs of users. [2]

To meet research needs, data collection and system development are carried out through various structured techniques. Details of each stage of research are presented below.

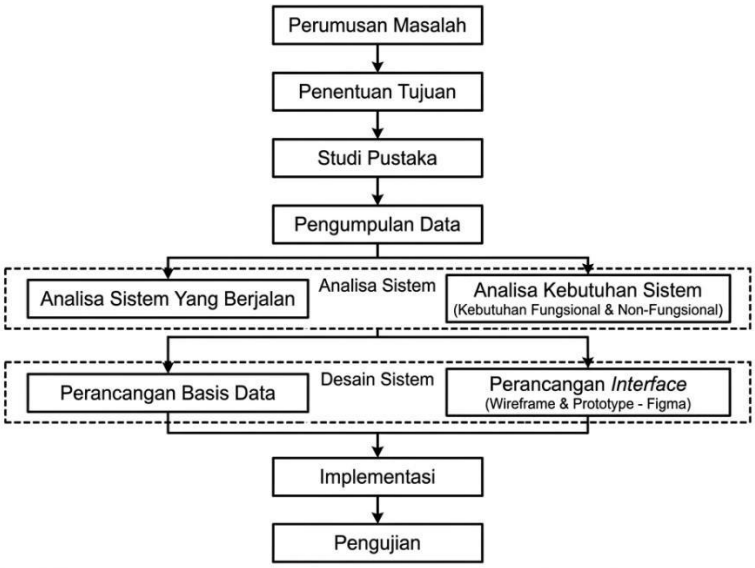


Figure 1. Research Stages

The eight stages above are carried out sequentially and interrelated. If deficiencies are found at the testing stage, improvements will be made at the design or implementation stage before retesting.

2. Planning Process

The design process of the Al-Amin Science Techno Park multimedia website uses various diagrams to analyze and plan the structure of the system. The design includes a use case diagram that illustrates the interaction between the actor and the system, as well as an interface design created using Figma before it is implemented into the code. [3]

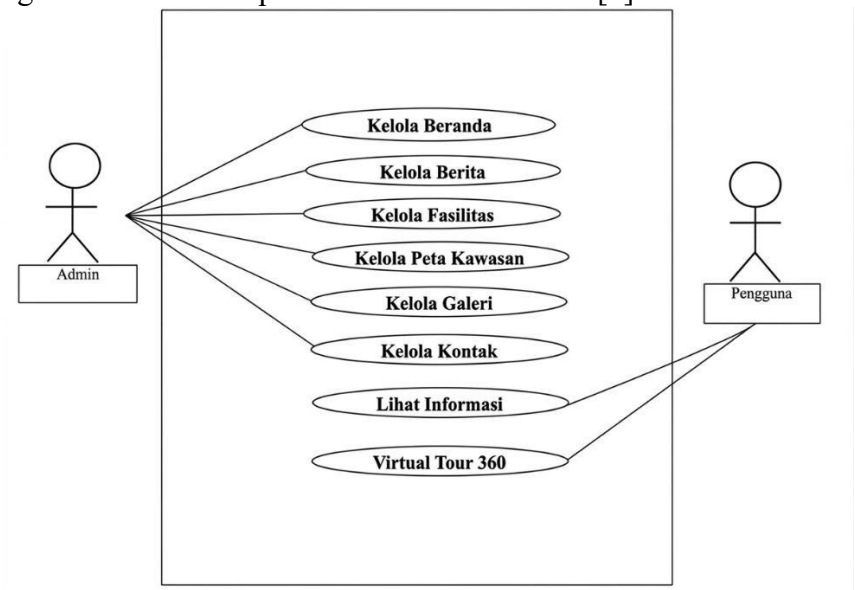


Figure 2. *Use Case* website Al-Amin Science Techno Park

Results

The resulting website displays Al-Amin Science Techno Park's information in a structured manner through the home page, about us, news, area maps, facilities, contacts, and multimedia galleries. The use of multimedia elements such as photos and videos helps to clarify the character of the area and strengthen the visual identity of the website. This is in line with the findings that interactive multimedia is effective in increasing appeal and helping to convey information. [3]

1. Needs Analysis

The design of the Al Amin Saince Techno Park Website has two (2) system needs, namely functional and non-functional needs. The functional needs of the system consist of several main functions that are interrelated and complement each other. Meanwhile, the non-functional needs of the system have a function as a supporting means so that the smoothness of the main function operates according to expectations. [5]

2. Functional Needs Analysis

The analysis stage aims to obtain the functional needs that will be developed on each page because in its design, the author will divide the application into 3 parts, namely the Main page of Al Amin Saince Techno Park, the About Us page and the Area Map page. The results of the functional needs analysis are as follows:

1. The Main Page contains about the design of the construction of Al Amin Saince Techno Park which is equipped with 360 features to provide an overview of the construction of Al Amin Saince Techno Park,
2. The About Us page contains travel information from the early construction of Al Amin Saince Techno Park and informs the vision and mission.
3. The area map page contains information about the Al Amin Saince Techno Park area and the highlights available in the area.

3. Non-Functional Needs Analysis

Non-functional needs are needs beyond functional needs, which include the need for hardware specifications and software needs that greatly affect the creation of websites. The functional needs include:

a. Hardware

The hardware specifications used in creating the Al-Amin Sience Techno Park website are as follows:

Processor	: Intel Core i7 10870H Processor
Memory (RAM)	: 8 GB DDR4
SSD	: 512 GB
Monitor	: Screen Resolution (1920×1080)
Keyboard	: QWERTY (86 keys)
Mouse	: Optical

b. Software

The software specifications used in the creation of the Al-Amin Sience Techno Park website are as follows:

Operating System	: Windows 11.
Photo Editor	: Figma
Programming languages	: HTML, CSS, and JavaScript.
Text Editor	: Visual Studio Code
Browse	: Google Chrome, and Microsoft Edge

4. The results of the design of the Al-Amin Sience Techno Park multimedia website. a. Branda's Page

On the home page of the Al-min Sience Techno park website, there is a special feature that is "Explore 360". This feature makes it easier for users to be able to explore the area in the Al-Amin Sience Tekno Park area. [6]

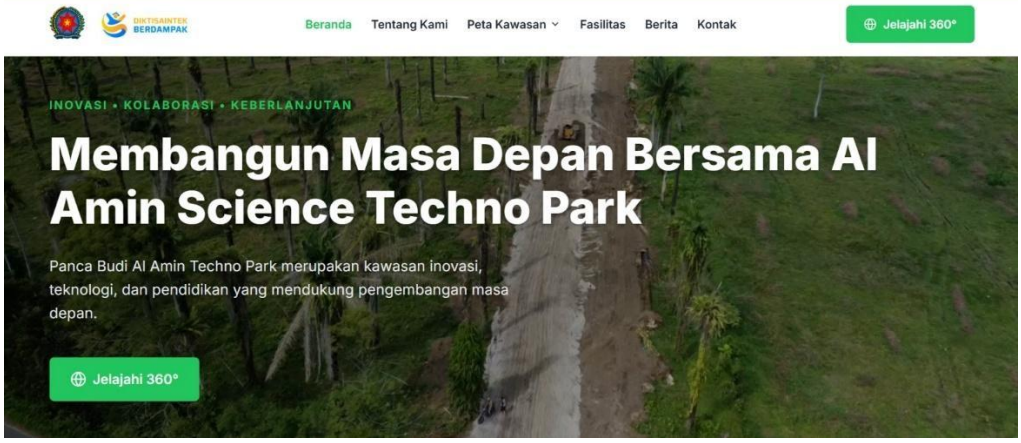


Figure 3. Home Page

b. About Us

On this page it explains the Vision, Mission and journey of Al-Amin Sience Tekhno Park. Al-Amin Sience is an integrated area that focuses on the development of innovation, research, education, and collaboration between practitioners, academics, and the community.

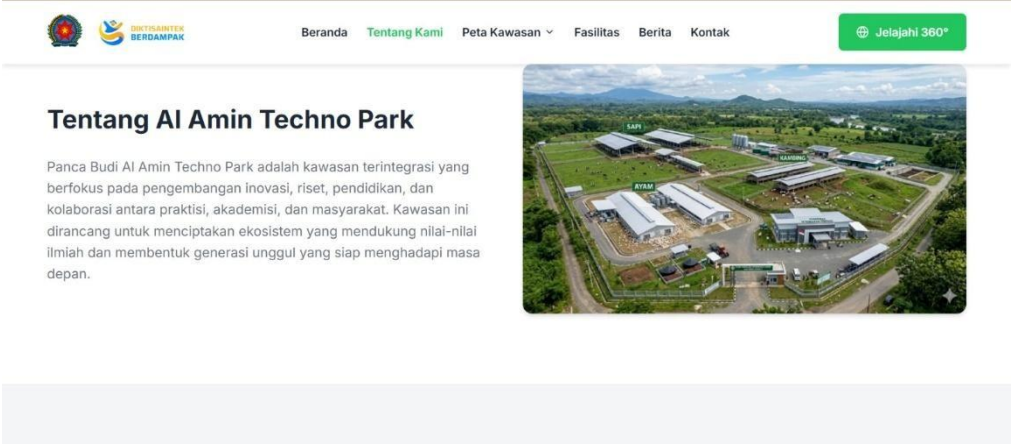


Figure 4. About us page.

c. Area Map

On this page it explains the area of the area in Al-Amin Sience Tekhno Park. Per-Area explains the efficiency and advantages that exist in each area. This page makes it easy for users to find out the Areas in Al-Amin Sience Tekhno Park.

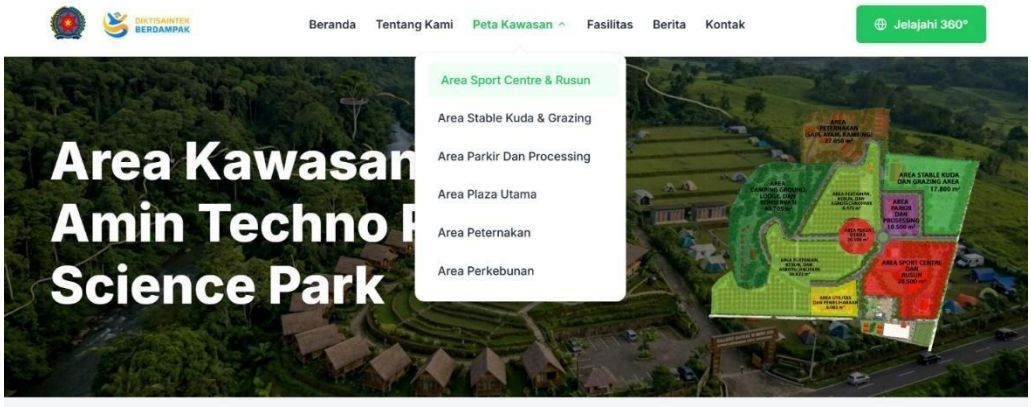


Figure 5. Area Map page.

d. Facilities

This page informs users about the facilities available in Al-Amin Sience Tekhno Park. Facilities at Al Amin Techno Park, Panca Budi University can be used to support the development of research, innovation, and practical learning experiences while being part of the Civilization Mandiri campus.

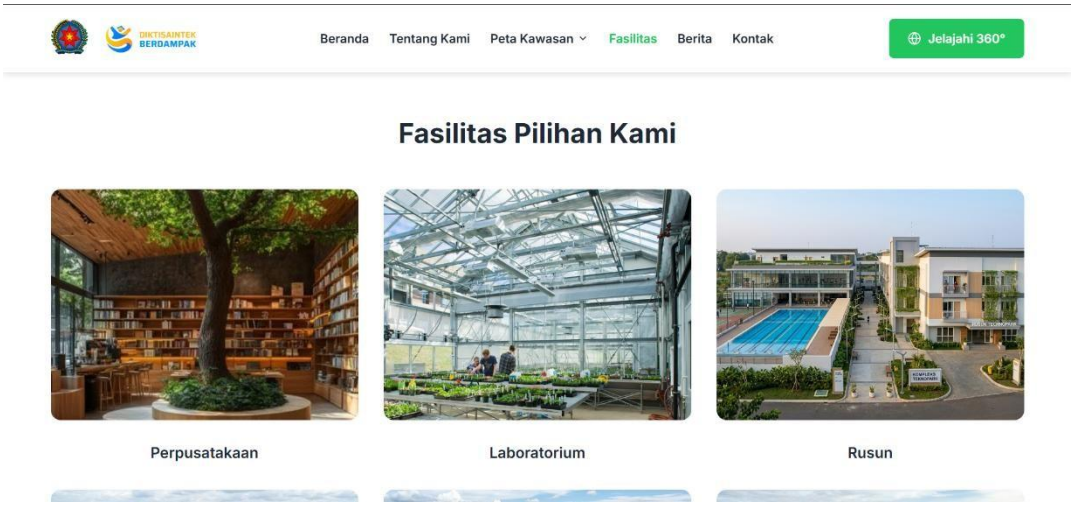


Figure 6. Facilities Page

e. News

This page can tell users about The latest updates on innovation, technology, and education areas that support future development.

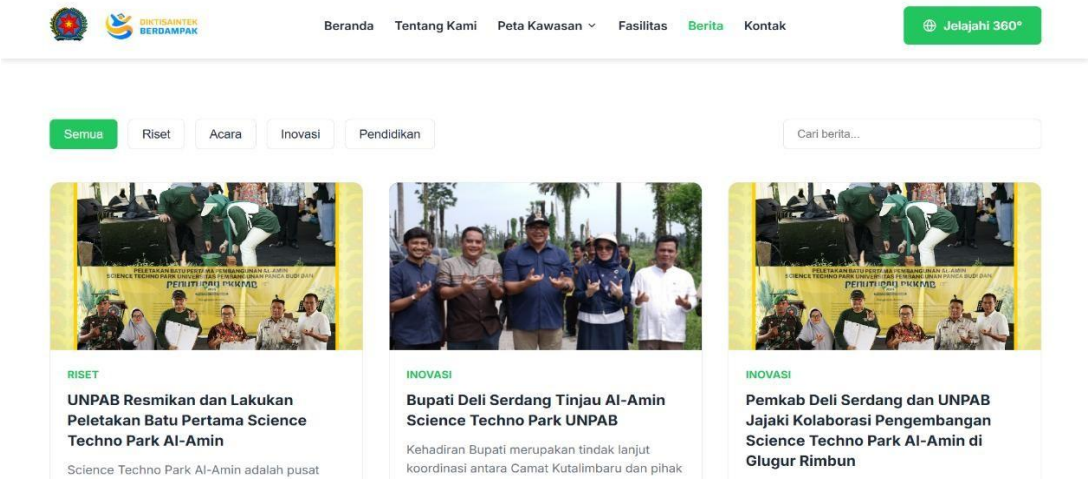


Figure 7. News Page.

f. Explore 360°

Explore 360° is an excellent feature where users can access the Areas in Al-Amin Sience Tekhno Park. This feature makes it easier for users to view the area online without having to come to the location.



Figure 8. 360° Explore feature

Conclusion

This research produced the Al-Amin Science Techno Park multimedia website which was designed using the Design Thinking method and implemented with Figma, HTML, CSS, and JavaScript. This website is able to present information about the area interactively through news features, facilities, area maps, photo and video galleries, contacts.

The Design Thinking method is proven to help the development process because every design decision is based on the needs of the user and the input of the partners. Evaluation and revision carried out with partners and DPL make the final results more suitable to support the region's digital promotion.

In the future, this website can still be developed with additional features such as content search, visit booking, or database integration to make news and gallery management more dynamic.

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