Research Article

Applying Design Thinking: A Case Study on Juragankos Bandung's Proposed Minimal Viable Product

[1]Imran Maulana, [2]Dedy Sushandoyo
[1,2]*School of Business Management, Institut Teknologi Bandung, Bandung, Indonesia.*

Abstract: Juragankos Bandung is an intermediary platform that connects boarding house owners with individuals seeking accommodation in the Bandung Raya area. As the journey of Juragankos Bandung in developing a user-centric MVP (Minimum Viable Product) and the need for an independent platform beyond social media to revolutionize boarding house rentals in Bandung Raya, the goals and challenge is to identify and determine a set of feature recommendations for Juragankos Bandung MVP development that addressing the identified needs and preferences of prospective boarding house seekers. Design thinking is the backbone of this study, guiding through stages of empathizing, defining, ideating, prototyping, and testing to systematically progress from understanding the end-user's perspectives. Several tools are used in every stage, consisting of a user persona, empathy map, value proposition canvas, SCAMPER, high fidelity prototyping, and usability testing to contribute uniquely to the development of the MVP, ensuring the final product is user-centric and market-ready. Insights from the value proposition canvas help to identify the key needs and preferences of individuals seeking boarding houses in Bandung Raya. Subsequently, the SCAMPER technique is employed to generate proposed key features for the MVP of Juragankos Bandung. These features are Embedded Google Maps Integration, Interactive 360-degree Virtual Tours, a Property Rating System with Photo Reviews, Close to University-Based Search Filters, Oper Sewa, Direct Chat, and a Reverse Searching System.

Keywords: Minimum Viable Product; Design Thinking; Juragankos Bandung; Boarding House; Intermediary Platform.

I. INTRODUCTION

Juragankos Bandung is an intermediary platform that connects boarding house owners with individuals seeking accommodation in the Bandung Raya area. This platform aims to simplify the process of finding suitable boarding houses for renters and assists owners in advertising their properties to a wider audience. Juragankos Bandung envisions itself as a leading figure in the local real estate industry, especially in the boarding house sector, by providing a reliable, comprehensive, and easily accessible service.

Boarding house, or "indekos/kos-kosan" in the Indonesian context, is a term used in Indonesia to refer to rental accommodations, typically small rooms or apartments, that are available for students or young professionals. These rental units are often located near educational institutions or business districts. Indekos provides affordable housing options for individuals looking for a convenient and cost-effective place to stay. Indekos offers basic amenities and services, such as furnished rooms, shared facilities, and utilities included in the rent. The concept of Indekos has gained popularity in Indonesia due to the increasing demand for affordable housing options in urban areas; it is a popular choice among students and young professionals seeking a temporary or long-term living arrangement. (Rukita, 2022)

Based on DataIndonesia.id (2023), sourced from the Indonesia Ministry of Education, Culture, Research, and Technology, the number of students in Indonesia was 9.32 million in 2022. This number increased by 4.02% compared to the previous year, which had 8.96 million students. The number of university students in Indonesia has been increasing from year to year. This shows that the Indonesian people are increasingly aware of the importance of higher education.

Considering the significant student population in Indonesia, which reached 9.32 million in 2022, an increase from the previous year, there is a burgeoning business opportunity for Juragankos Bandung, especially since West Java, including Bandung Raya, has a high concentration of students. This demographic trend, coupled with the high interest in university education in these provinces, presents a lucrative market for boarding houses that cater to students seeking affordable, convenient, and well-serviced accommodation near their educational institutions.

Bandung Raya, also known as Cekungan Bandung or Bandung Metropolitan, is a metropolitan area that includes Bandung City, Cimahi City, and surrounding areas such as Bandung Regency, West Bandung Regency, and five districts in Sumedang Regency. It covers a total area of 3,497.5 km2 and has a population of 8,790,308 people as of 2021. The area is

designated as a National Strategic Area for its economic importance. It is being developed to become a world-class urban center for culture, tourism, and a creative economy based on high-tech industries and higher education. The development of transportation infrastructure, such as integrated modes of transportation like trains, buses, and cable cars, is being planned to address the growing traffic congestion in the area (Badan Pengelolaan Cekungan Bandung, 2022)

The boarding house industry in Indonesia has been significantly impacted by various factors, including the COVID-19 pandemic and evolving housing policies. A study highlighted the decrease in occupancy rates of indekos during the pandemic by 47%, affecting the financial and social capital of the business owners. Despite these challenges, indekos entrepreneurs exhibited resilience by engaging in creative activities like urban farming (Al Tumus et al., 2022).

As the industry adapts to the new normal, a business issue arises regarding the need for innovative rental solutions that cater to both parties' evolving demands and preferences. The findings from this research will provide insights and recommendations for improving the overall boarding house rental process in the Bandung Raya Area.

The research aims to identify essential features for a boarding house intermediary platform, focusing on what is most valued by boarding house seekers in the Bandung Raya Area. It will explore user expectations, preferences, and challenges in the current rental landscape, with the goal of proposing a Minimum Viable Product for Juragankos Bandung. This study will concentrate on web-based platform functionalities. It is restricted to respondents currently renting boarding houses, indekos, or apartments in the Bandung Raya Area.

II. LITERATURE REVIEW

A) Minimum Viable Product

The Minimum Viable Product (MVP) is defined as the most basic version of a product that can be released. It has enough features to satisfy early customers and provides a feedback loop to guide future development. The primary purpose of an MVP is to test fundamental business hypotheses and learn how the target market reacts to a product's core functionality. It helps in validating the product-market fit with minimal resources. In an MVP-focused development process, the goal is to quickly develop a basic product version, release it to a small group of people, and collect and analyze their feedback. This feedback informs what changes or improvements are necessary (Ries, 2017).

B) Design Thinking

Design thinking is a human-centered problem-solving methodology emphasizing empathy, collaboration, and iteration to develop innovative solutions for real-world challenges. At its core, it involves understanding user needs and perspectives (empathize), framing the problem effectively (define), generating a wide range of potential solutions (ideate), creating rough prototypes to test and refine those ideas (prototype), and continuously gathering feedback to improve upon them (test). This iterative process fosters creativity, reduces the risk of failure, and ultimately leads to solutions that are both desirable and feasible (Brown, 2009).

C) User Persona

A user persona is a hypothetical description of a specific potential user, representing a member of a class of users, characterized by specific attributes rather than generalities, providing a human face to otherwise abstract data about customers, and aiding in design by helping teams infer real user needs, which assists in brainstorming, use case specification, and features definition, while also preventing common design pitfalls such as designing for the "Elastic User," self-referential design, and misplaced focus on edge cases, thus fostering a shared understanding among team members about user groups and guiding design solutions to meet the needs of individual user personas (Cooper, 1999).

D) Empathy Map

Empathy Map is a method for understanding audiences, including users and customers. The goal is to gain a deeper understanding of a stakeholder within a business ecosystem. The map is divided into sections representing different aspects of a person's sensory experience. It helps in empathizing with the stakeholder's experience to design better products or services (Gray, 2017).

E) Value Proposition Canvas

The Value Proposition Canvas, developed by Osterwalder and colleagues in 2014, is a strategic tool that plays a crucial role in MVP (Minimum Viable Product) development, particularly when aligned with design thinking principles. This tool is instrumental in assisting businesses to meticulously understand and design value propositions closely aligned with customer needs and desires. In the context of MVP development, the canvas acts as a guide to ensure that the product being developed is not only viable in the market but also resonates deeply with the target customer segment (Osterwalder et al., 2014).

F) SCAMPER

SCAMPER is a brainstorming technique that uses a set of directed questions to resolve problems or explore new opportunities. It effectively transforms tired or old ideas into something novel and different. This method is part of a broader problem-solving process which includes defining the problem, analyzing causes, generating ideas, assessing alternatives, making decisions, implementing solutions, and evaluating outcomes (Cornell University Library, 2009)

G) High Fidelity Prototype

A high-fidelity prototype is a near-final version of a product used for identifying flaws. It is realistic and interactive, allowing designers to receive feedback from real users. The process includes creating a storyboard and a mood board and developing prototypes for low to high fidelity. High-fidelity prototypes are essential for testing complex interactions and features, providing an accurate representation of the final product (Uddin, 2023).

H) Usability Testing

According to Nielsen, J., & Norman, D. (2019), usability testing is a method by which users of a product are asked to perform certain tasks in an attempt to measure the product's usability. This includes how easy the product is to use, the user's ability to complete tasks successfully, the time it takes to complete these tasks, and the user's perception of their experience. Key components of usability testing involve a facilitator guiding the participant, realistic tasks that reflect typical user activities, and participants who represent actual product users. Participants are often encouraged to think aloud while performing tasks, providing insights into their thought processes and experiences.

I) Conceptual Framework

The conceptual framework consists of two main business tools. Design Thinking and Minimum Viable Product (MVP) underpin the iterative cycle of Design Thinking, a systematic approach to complex problem-solving that is thoroughly user-centric.
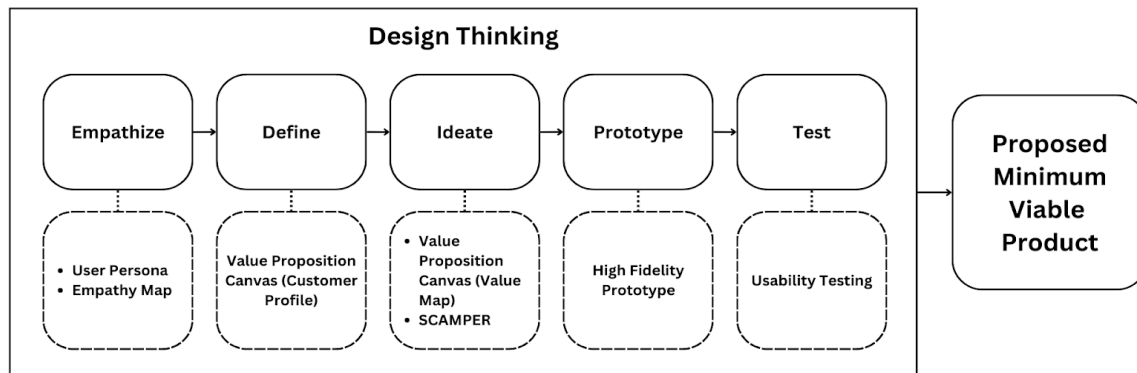

Figure 1: Conceptual Framework

Design Thinking serves as the backbone of this framework, guiding through stages of Empathize, Define, Ideate, Prototype, and Testing to systematically progress from understanding the end-user's perspectives. The objective is to develop a proposed Minimum Viable Product (MVP) that encapsulates essential functionalities identified as core needs.

III. RESULTS AND DISCUSSION

The proposed Minimum Viable Product (MVP) for Juragankos Bandung should focus on addressing boarding house seekers' key needs and preferences. These needs include:

Table 1: Key Needs and Preferences

Key Needs and Preferences	Description
Comprehensive Database	This includes a wide range of boarding house listings with up-to-date information. This database must offer detailed descriptions of each property, covering aspects such as facilities, exact location, pricing, and availability in real-time.
User-Friendly Platform	The platform should be easy to navigate with efficient search filters, allowing users to find what they need quickly. Interactive maps are crucial for visualizing locations, and a robust customer support system will help address queries and issues.

Diverse Accommodation Options	The platform should offer various accommodation types to cater to various preferences and stay durations. This diversity ensures that users find options that best suit their individual needs.
Secure Transaction System	It is vital to have a system that verifies listings and ensures safe transactions. This builds trust among users and enhances the platform's reliability.
Streamlined Booking and Payment Processes	The platform should facilitate easy booking, payment, and communication with property owners. Features like digital payments and direct messaging will streamline these processes.
Personalized Local Services	Utilizing local knowledge to provide personalized recommendations and services can greatly enhance the user experience. This includes guidance on navigating the local rental market.
Quality Control Measures	This involves ensuring the quality and authenticity of listings, including standardizing photo quality and verifying listing details.

Guided by the recognized key needs and preferences, a set of key feature suggestions for the MVP of Juragankos Bandung has been formulated. These suggestions are aligned with the specific requirements and desires of boarding house seekers, ensuring a targeted and effective development of the MVP.

Table 2: Proposed Key Features

Key Features	Function
Embedded Google Maps Integration	The integration of Embedded Google Maps offers enhanced location accuracy, convenient in-app navigation, and a familiar user interface, significantly improving the efficiency and user experience in finding and assessing boarding houses.
Interactive 360-degree Virtual Tours	This feature addresses the pain point of potential tenants not being able to accurately gauge the space and condition of the property from static images, offering a more engaging and informative experience.
Property Rating System with Photo Reviews	This feature offers a more transparent and trustworthy rating and review system, significantly aiding users in making informed decisions based on real-life experiences and visual evidence from current or previous tenants.
Close to University-Based Search Filters	This feature directly caters to one of the primary needs of many boarding house seekers, especially students who prioritize proximity to their university. It streamlines the search process, saving time and effort by allowing users to find options most relevant to their specific location requirements quickly. This tailored search approach enhances user experience and efficiency in finding suitable accommodation.
Oper Sewa	This feature not only introduces flexibility for tenants in managing their leases but also provides a solution for those seeking short-term accommodation. It significantly benefits tenants who encounter unforeseen circumstances or incompatibilities with their current boarding house, allowing them to transfer their lease agreement easily. This flexibility is a win-win for both parties, making the boarding house market more adaptable and responsive to individual needs.
Direct Chat	Eliminating the chatbot addresses the respondent's need for direct and specific interactions with property owners. This change ensures that queries are answered with accurate, property-specific information, enhancing the user experience with more meaningful and reliable communication. It caters to users who prefer personal touchpoints and detailed responses directly from the source.
Reverse Searching System	This feature significantly reduces the time and effort boarding house seekers spend searching for suitable accommodations. It addresses the pain of navigating through numerous listings by providing targeted, landlord-initiated options that align with renters' specific needs and preferences. It enhances the user experience by focusing on compatibility between tenant requirements and property offerings.

IV. CONCLUSION

This research aimed to identify the essential features desired by boarding house seekers, thereby guiding the development of a Minimum Viable Product (MVP) for Juragankos Bandung. The findings indicate a clear preference for platforms that prioritize functionality, reliability, and user-friendliness. Key features that emerged as crucial include comprehensive and accurate property listings, a user-friendly interface with efficient search filters, integrated map functionalities, and transparent communication channels with property owners. Additionally, the study uncovered specific needs for Juragankos Bandung, leading to the incorporation of unique features in the proposed MVP. These include embedded Google Maps integration, interactive 360-degree virtual tours, a property rating system with photo reviews, university proximity-based search filters, Oper Sewa, a direct chat feature, and a reverse searching system. These features are designed to enhance the user experience specifically for the boarding house rental market in Bandung Raya. Overall, the research supports the development of an MVP that not only meets the general requirements of users but also addresses unique local needs, setting

a new benchmark in the boarding house rental sector.

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