

LIVWELL: A RENTAL PROPERTY E-COMMERCE AND MANAGEMENT SYSTEM

A Thesis
Presented to the Faculty of
Computer Studies Department
College of Science
Technological University of the Philippines
Ayala Boulevard, Manila

By

Cujardo, Gwynn R.
Florendo, Cyrus Nathaniel P.
Jaime, Jewel Vaida A.
Quiambao, Aeron Justin C.
Salangsang, Arsenic M.

**In Partial Fulfillment of the
Requirements for the Degree
Bachelor of Science in Information System**

2024

Chapter 1

THE PROBLEM AND ITS SETTING

Introduction

The Philippines, being an archipelago of over 7,000 islands, is a home to a large number of residential dwellings. From single-family homes to high-rise condominiums, a vast variety of options are available to cater the diverse needs and preferences of the population. It is a major milestone for most people to purchase a house, and is often considered as a symbol of stability and success. However, in recent years, customers' preferences have shifted toward renting rather than buying. This transition can be linked to a variety of factors, including the increasing cost of homeownership, changing lifestyles, and the flexibility that renting provides (Statista, 2024).

As the field of information technology continues to expand, e-commerce has become a viable business opportunity, revolutionizing the way people shop. E-commerce platforms allow consumers to shop online and pay online, without the need of face to face interaction, through the Internet at the comfort of their home, saving time and space, particularly in enterprises, greatly enhancing transaction efficiency. Furthermore, this virtual marketplace offers a wider selection of products and services than ever before, opening new opportunities that extend beyond traditional product sales like property rentals.

Finding suitable and affordable accommodation, whether for rental or for permanent residence, is a crucial challenge for many individuals, as more people migrate to urban areas, like Manila, in search of employment and better opportunities. However, with the emergence of advanced technology, web applications and systems that facilitate house searches can make these tasks simpler. Additionally, putting concepts like management into the digital realm facilitates communication and streamline tasks such as rent collection, requests, and lease agreements, between the landlord and potential tenant, allowing a smoother and more efficient process.

Fortunately, the proposed system has the capabilities to help individuals to locate available rental properties and help owners to promote and manage their units efficiently. With the

utilization of the agile scrum methodology and quantitative research method, the researchers aim to achieve the desired outcome of the study.

In conclusion, as more people flock to urban areas in the Philippines and preferences for housing evolve, there is a growing need for innovative solutions in the rental market. This research project introduces a system that harnesses the power of e-commerce and advanced technology to make the search for tenants easier and property management smoother for landlords. By offering a user-friendly approach, this system has the potential to ease the challenges of finding the right accommodation in a competitive market, benefiting both landlords and tenants alike.

Background of the Study

The concept of renting properties in the Philippines is a process that will always be familiar to the Filipino community, as people of any stature are exposed to this process as it involves the livelihood of the people. Renting is divided into two main categories, short-term and long-term rentals, and with different uses, benefits, and drawbacks, the type of category that one will use depends on the factors surrounding that property. In terms of finding a place to live well in or grow a business wherein the space is advantageous, long term renting with leases are usually the standard in this category. Thus this simple and common yet flourishing concept of renting continues to play a crucial role in shaping the housing market and providing stable accommodation options for individuals and businesses in the Philippines. Unlike short-term rentals, which cater to transient needs, long-term rentals involve contractual agreements spanning months or even years, offering tenants the stability and security needed to establish their living space or sustain business operations.

As people began to harbor the fruits of real estate, people saw the value in land and housing, treating this as an opportunity, some nurtured and supported this process until it evolved into the concept it is today. In the context of the Philippine rental market, long-term rentals are the cornerstone of residential, commercial, and even industrial property transactions. Together with fixed leases, these rentals provide tenants a sense of permanence, allowing them to create a temporary home or establish businesses within an environment that is stable and strategic. For

property owners, long-term rentals offer steady income streams and the opportunity to cultivate enduring symbiotic relationships with the property's tenants.

Real estate is essentially a tangible asset made up of the property and the land on which it sits, and while it is immovable, real estate, like other assets, is also subject to supply and demand. This means that the prices of properties and their rent, depend heavily on the law of supply and demand. Thus more demand, prices rise; more supply, prices fall. To understand the process of renting is to learn its essential concepts, as the process of long-term renting involves parties that work together to form a sustainable and beneficial relationship. Essentially, renting is a simple process with many key steps. Beginning by first marketing your property, albeit locally or online, the times today provide various opportunities to showcase your property no matter the distance. Potential suitors then contact the property owner through various means, creating a point of contact that is essential in determining the future of that rental property. Leading to the agreement and the formation of possible contracts or leases that decide how the renting agreement will continue on and amend issues that may arise.

Mentioned are the many factors that work together to form a successful rental property, and some of these factors are not always in a good condition. Such are the reasons why disputes and issues occur in the highly marketable rental space. In the area of property listing, many websites and platforms are created to handle long-term renting of properties yet there has been no consistent and well-known brand contrary to the space of short-term renting of properties. This has led to a more tedious and time-consuming process for both the property owner and the potential tenants. In regards to property management, there is also no real well-known service that handles long-term renting indicating a need to fill in a crucial gap that will ease the process of observing and analyzing your properties, helping property owners plan and strategize better. The management of properties can also help in allowing contact between owner and tenant, creating a consistent means of communication serving as a streamlined way of being up-to-date with matters that concern the parties' livelihood. By leveraging technology and data analytics, these platforms can provide landlords with valuable insights helping create better and optimized decision-making. Moreover, while technology has undoubtedly facilitated the rental process in many ways, it may also introduce new complexities and challenges. Combining the two concepts of listing and

management will aid in making a platform that encourages customer retention and customer satisfaction.

In conclusion, the rental market in the Philippines presents significant opportunities for innovation and growth. With the increasing urbanization and economic development in the country, demand for quality rental properties is on the rise, presenting an opportunity for services to capitalize and develop integrated rental platforms that streamline the entire rental process, from property listing and accessibility to lease and complaint management. By providing sustainable and accessible solutions, fostering innovation and collaborative relationships, the proper platform can unlock and begin the potential of the rental space, contributing to a better experience for everyone involved.

Objectives of the Study

General Objective

The main objective of the study is to develop a rental property e-commerce and management system through the development of a website application catering to both landlords and tenants. The platform allows landlords to list and manage their rental properties and allows tenants to explore available rentals.

Specific Objectives

The following are the specific objectives of the study:

1. Design a website application for a rental property e-commerce and management system with the following components:
 - a. E-commerce platform that showcases properties to rent:
 - Showcase available property listing with price and contacts of its Landlords.
 - Filter feature to search desired property.
 - Create an account to be both a landlord and tenant.
 - b. Module for the landlord with the following features:
 - Property listing

- Monitoring available properties for renting
 - Monitor tenant payment status
 - Monitoring revenue and profit from rented properties
 - Data analytics feature
 - Issuance of Smart Contract
 - c. Module for the tenants with the following features:
 - Payment Status
 - Complaint board
2. Create the website application using the following software development tools and scripting language:
- a. Programming Language
 - Python
 - b. Front-end tools
 - HTML
 - JS
 - CSS
 - React Js
 - c. Back-end tools
 - Django
 - d. Database Management System
 - MySQL
 - MongoDB
 - e. Version Control
 - Github
 - f. IDE
 - Visual Studio Code
 - g. User-Interface Tools
 - Figma
 - AdobeXD

3. Test and improve the website application based on functional suitability and reliability
4. Evaluate the acceptability of the website application by gathering multiple users to operate the system. The tool that will be used to evaluate the application is ISO25010, which will evaluate the application's acceptability in terms of sustainability, timely, accuracy, and maintainability.

Significance of the Study

Apartment renting has become a solution for people who move places, as it offers a flexible and convenient living arrangement. The result of this capstone, LivWell, will be beneficial to the following:

Landlords

LivWell will be beneficial for the Landlords. The result of this capstone will give landlords a platform wherein they can list their properties and manage those properties effectively. Additionally, it will make them more efficient and modernized.

Tenants

LivWell will be beneficial for the tenants. The result of this capstone will be practical in finding available properties for rent, allowing them to be efficient in finding apartments and have access to resources and information related to the properties.

Future Researchers

The capstone will be beneficial for future researchers. This paper can serve as a valuable reference that can improve future studies with similar objectives. Furthermore, they can provide additional data and features, solidifying the capstone that the researchers have started.

Scope and Limitations

This study centers on the development of an e-commerce and management system website dedicated to showcasing properties in the Philippines. It endeavors to provide landlords with a robust platform to exhibit their rental properties, enabling them to effectively connect with

potential tenants. Through a user-friendly interface, landlords will have the flexibility to create, update, customize, and remove their listings within the system, ensuring accurate representation and efficient management of their properties.

In addition to serving landlords, this study strives to address the pressing needs of tenants, particularly students or individuals seeking suitable accommodations in close proximity to their educational institutions or workplaces. By facilitating easier access to rental options, this initiative aims to enhance convenience and streamline the property search process for prospective tenants, thereby fostering a more seamless transition into their new living arrangements or commercial spaces.

This study's overarching goal is to foster mutual benefits for both tenants and landlords alike. By leveraging advanced search functionalities and customizable filters, tenants can pinpoint properties that align closely with their preferences, budgetary constraints, and lifestyle requirements. Simultaneously, landlords stand to gain increased visibility and exposure for their rental properties, thereby maximizing their potential for occupancy and revenue generation.

The e-commerce and management system website is meticulously crafted using a diverse array of cutting-edge web development technologies and frameworks, including but not limited to Python, HTML, JS, CSS, React Js, Django, MySQL, MongoDB, Github, Visual Studio Code, Figma, and Adobe XD. By harnessing the power of these tools, the platform offers unparalleled scalability, reliability, and performance, ensuring a seamless user experience across various devices and browsers.

Moreover, the system's web-based architecture eliminates the need for cumbersome downloads or installations, providing users with instant access to its full suite of features and functionalities directly through popular web browsers such as Chrome, Safari, Firefox, Opera, and Edge. By implementing stringent security measures and encryption protocols, the platform safeguards sensitive user data and ensures uncompromising privacy and data integrity.

Users are encouraged to create personalized accounts to unlock exclusive access to premium features and detailed insights into the listed properties within the system. Landlords, in particular, can leverage their accounts to showcase their rental properties to a broader audience, while also gaining invaluable insights into market trends, demand dynamics, and competitive pricing strategies.

Furthermore, the platform adopts a seamless user experience design, allowing users to seamlessly transition between different roles and functionalities with minimal friction. Whether users are landlords seeking to list their properties or tenants searching for their next ideal rental, the platform offers intuitive navigation and robust backend support, empowering users to achieve their respective objectives with ease and efficiency.

Reference/s:

Mansa, Julius. (2023, July 16). How Does Supply and Demand Affect the Housing Market?
Investopedia. Retrieved from

<https://www.investopedia.com/ask/answers/040215/how-does-law-supply-and-demand-affect-housing-market.asp>

Statista. (n.d.). Residential Real estate Leases - Philippines | Forecast.

<https://www.statista.com/outlook/fmo/real-estate/residential-real-estate/residential-real-estate-leases/philippines#analyst-opinion>