

Development and Analysis of Asset-Backed Investment Tokens



**Worapat Chuapraditpun
Worranipit Thanatavee**

**Bachelor of Engineering in
Financial Engineering
School of Engineering
King Mongkut's Institute of Technology Ladkrabang
Academic Year 2023**

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Thesis – Academic Year 2023

Bachelor of Engineering in Financial Engineering

School of Engineering

King Mongkut's Institute of Technology Ladkrabang

Title: Development and Analysis of Asset-Backed Investment Tokens

Authors

1. Worapat Chuapraditpun Student ID: 63011380
2. Worrnipit Thanatavee Student ID: 63011381

Approved for submission



(Assoc. Prof. Dr.Saran Sarntisart)
Advisor

Date 23 / 04 / 24



(Dr. Natthapong Jungteerapanich)
Advisor

Date 23 / 4 / 2024

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Abstract

This financial engineering project aims at studying, developing, and applying digital tokens. We explore the development and analysis of asset-backed investment tokens with a focus on utilizing cars as collateral and land consignment sale. Asset-backed tokens represent ownership or entitlement to underlying assets, and their utilization in investment products has gained traction in the financial industry.

The research delves into the structuring, implementation, and evaluation of investment products based on digital tokens backed by physical assets. Specifically, it investigates the viability and benefits of using cars as collateral for loans and land consignment sale arrangements as means of raising funds through tokenization. The study examines how tokenization enhances liquidity, transparency, and efficiency in asset-backed investments, ultimately aiming to provide a comprehensive understanding of the opportunities and challenges associated with the development and analysis of asset-backed investment tokens. Through empirical analysis, case studies, and theoretical frameworks, this research contributes to the growing body of knowledge on innovative financial instruments and their implications for asset-backed securities markets.

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Chapter 1

Introduction

1.1 Motivation

Innovation in Finance

Tokenization represents a novel approach to financial instruments and transactions. By leveraging blockchain technology and tokenization, you can explore innovative ways to structure lending and deposit products, potentially leading to more competitive interest rates for both borrowers and savers.

Efficiency and Transparency

Tokenization can streamline financial processes, reduce intermediaries, and increase transparency. Implementing tokenized assets for loans and deposits can lower operational costs, which may translate into better interest rates for customers while maintaining profitability for financial institutions.

Access to Capital

Tokenization has the potential to democratize access to capital by breaking down barriers to entry for borrowers and lenders. By tokenizing loans and deposits, you can broaden access to financial services, especially for underserved populations or small businesses that may struggle to obtain favorable interest rates through traditional channels.

Market Disruption

Tokenization has the potential to disrupt traditional financial markets by offering alternative means of accessing capital and generating returns. By exploring tokenized solutions for loans and deposits, you can contribute to market innovation and challenge the status quo, potentially leading to more competitive interest rate offerings across the financial industry.

1.2 Objectives

1. Develop a comprehensive understanding to gain a deep understanding of digital tokenization, blockchain technology, and their applications in finance. Explore the potential benefits and challenges of utilizing tokenization to create innovative investment products.
2. Identify market needs to conduct market research to identify gaps and inefficiencies in traditional banking and investment offerings. Determine the specific needs and preferences of potential borrowers and lenders, including desired interest rates, terms, and risk profiles.
3. Design a new investment product based on digital tokens that addresses the identified market needs. Define the product's features, including interest rate mechanisms, collateralization options, repayment structures, and liquidity provisions.
4. Optimize Risk-Return Profile to optimize the risk-return profile of the new investment product. Implement mechanisms to mitigate credit risk for lenders while maximizing returns for investors. Explore innovative risk management techniques enabled by blockchain technology.

1.3 Scope of Work

To achieve our objectives, the scope of this project can be listed as follows:

1. Market Analysis

- Conduct market research to understand the needs, preferences, and behaviors of potential borrowers and lenders.
- Identify existing gaps and inefficiencies in traditional banking and investment products.
- Analyze regulatory requirements and market dynamics related to digital assets and financial investments.

2. Product Design and Development

- Define the features and characteristics of the new investment product, including interest rate mechanisms, repayment structures, collateralization options, and liquidity provisions.
- Determine the underlying blockchain technology and token standards to be utilized for tokenization.
- Design the user interface and experience (UI/UX) for investors and borrowers to access and interact with the investment product.

3. Risk Management and Compliance

- Implement risk management strategies to mitigate credit risk for lenders and protect investors' interests.
- Ensure compliance with relevant regulatory requirements and guidelines governing digital assets, securities laws, and investor protection measures.
- Establish mechanisms for transparent disclosure of terms, performance metrics, and asset-backed collateral to enhance trust and transparency.

1.4 Thesis Structure

This thesis consists of five chapters which are arranged as follows:

- Chapter 1 Introduction - refers to the motivation, objectives, scope of work, and thesis structure of this thesis.
- Chapter 2 Literature Review - proposes the Literature survey that is relevant to this project and comparison.
- Chapter 3 Research Methodology - clarifies the methodology adopted to carry out the research and develop the necessary platform.
- Chapter 4 Results and Discussion - presents the results obtained from the research conducted and discusses them in detail, analyzing their implications and limitations.
- Chapter 5 Conclusion and Recommendations - summarizes the research work done, restates the conclusions derived from the study, and suggests possible recommendations for future work in this field.

Chapter 2

Literature Review

This section will present a comprehensive review of literature regarding the evolution of digital tokens. The rapid growth of digital tokens have revolutionized the financial landscape, providing new opportunities for investment and transactional activities. Through an examination of academic research and industry analyses, this literature review aims to delve into how financial sectors have embraced digital tokens.

2.1 Potential of Tokenization

FinTech encompasses a range of technological innovations aimed at improving financial services. Tokenization, a key aspect of FinTech, involves the conversion of rights to assets into digital tokens on blockchain networks. These tokens represent ownership or entitlement to underlying assets, facilitating more efficient and transparent transactions. Tokenization has the potential to enhance asset liquidity by fractionalizing traditionally illiquid assets. Assets such as real estate can be tokenized, enabling investors to buy and sell fractional ownership stakes with ease. This increased liquidity in asset markets promotes competition and depth, driving down borrowing costs and narrowing the interest rate gap. Tokenization enables more efficient capital allocation by connecting lenders directly with borrowers. Peer-to-peer lending platforms, decentralized finance (DeFi) protocols, and crowdfunding platforms facilitate the flow of capital to where it is most needed, reducing intermediation costs and improving interest rate competitiveness.

2.2 Initial Coin Offering

An Initial Coin Offering (ICO) is a digital method for raising funds by issuing digital tokens via a public blockchain network. In exchange for digital currency, the fundraiser issues a digital token. Recognized for its speed, convenience, and cost-effectiveness, ICOs have become a popular fundraising method among tech startups, even outpacing traditional venture capital fundraising in growth, as noted by the SEC.

The SEC plays a crucial role, especially since certain digital tokens might be regarded as financial instruments akin to securities under the Securities and Exchange Act B.E. 2535. Beyond this, ICOs can be structured so that the tokens represent various rights for the holders, such as earning potential or entitlement to goods and services, akin to a coupon or promotional offer. Another model might involve tokens that allow for revenue sharing or other benefits from the operations of the business. Therefore, ICOs fall under the SEC's regulatory scope only if they are deemed as securities offerings; otherwise, they do not come under SEC supervision.

Investing in Initial Coin Offerings (ICOs) offers the potential for significant returns if the project proves successful. However, it also comes with considerable risk, and there's a real possibility that investors could lose their entire investment. Before committing funds, investors should thoroughly research and understand their investment approach. Here are several key aspects investors should examine before investing: 1) Clarify the issuer's intentions with the raised funds and whether they have a solid business plan. 2) Understand the rights of token holders as detailed in the project's white paper. 3) Verify the transparency of the smart contract by checking its availability on the project's website and its consistency with the white paper's promises. 4) Assess the security and reliability of the digital wallet or platform used for the ICO, ensuring there are no reports of hacks, fraud, or scams.

2.3 Tokenomics

Tokenomics, also known as Token Economics, encompasses the economic aspects of digital tokens, covering their inception, administration, and the mechanisms for their removal from a network. Essentially, it outlines the regulations and procedures that control the supply and demand within the ecosystem of cryptocurrencies and tokens. The distribution of these digital assets on a blockchain is typically executed through algorithms set in advance, with certain crypto assets being programmed with specific rules that manage their lifecycle and circulation. Factors like the rate of supply turnover are crucial in tokenomics, helping to track the generation and elimination of specific tokens or coins. Tokenomics also facilitates predictions on the minting of tokens over a given timeframe and ensures traceable ownership through the cryptographic network. Nevertheless, alterations to the tokenomics of various assets are possible, usually requiring consensus or approval from a majority of the network's participants before any changes can be implemented.

Tokenomics plays a crucial role in the realm of cryptocurrencies, primarily because the creation and distribution of many cryptocurrencies are executed through tokens. For instance, during the launch of a new cryptocurrency, it's common to employ an Initial Coin Offering (ICO) as a method to distribute tokens to the project's early backers. These tokens not only grant holders access to the new cryptocurrency and its network but may also offer additional perks, such as voting rights on network decisions or privileges to certain functionalities and services. Thus, how tokens are designed and allocated within a cryptocurrency network can greatly influence its overall success. This underscores the growing importance of tokenomics as a field of study within the cryptocurrency and blockchain technology landscape.

2.4 Thailand Cryptocurrency Regulations

In Thailand, the legal and regulatory environment for digital tokens and cryptocurrencies shares similarities due to both being digital or virtual currencies that operate on blockchain technology and are not governed by any central authority. In 2013, the Bank of Thailand made a move to restrict financial institutions from engaging in any transactions involving digital or cryptocurrency, pointing to risks such as money laundering and the need for consumer protection. Consequently, Thai financial institutions are barred from purchasing, selling, or holding digital tokens for their clients. Nevertheless, the Thai government initiated regulatory reforms in 2018 to bring digital assets within a legal framework. By 2019, the Thai Securities and Exchange Commission (SEC) had set out guidelines for Initial Coin Offerings (ICOs), enabling companies to generate capital through the issuance of digital tokens or coins indicative of company ownership. Additionally, the SEC laid down rules for cryptocurrency exchanges, mandating their registration with the SEC and adherence to consumer protection regulations. Despite these regulatory advances, the adoption of digital and cryptocurrencies in Thailand remains moderate, with future regulatory adjustments and their impact on the economy.

2.5 Comparison with other related work

RealX Token

RealX is an investment token issued by Real Estate Exponential Company Limited while the initial coin offering portal is provided by Token X Company Limited. The following 3 condominium projects are Park Origin Phrom Phong ,Park Origin Phayathai and Park Origin Thonglor. The RealX Token initiative was developed by a consortium of technology and real estate experts aiming to integrate blockchain technology with Thailand's real estate market. Utilizing the Ethereum blockchain, RealX Token allows for the fractional ownership of property, making real estate

investment more accessible to a broader audience. The initiative received attention for its innovative approach to solving traditional market challenges, such as high entry barriers and lack of liquidity.

Sirihub token

The first SEC regulated real estate-backed investment token in Thailand that will allow investors to gain stable yields. The underlying asset is Siri Campus, which has steady cash flow generated from a long-term lease agreement with Sansiri Public Company Limited.



Chapter 3

Research Methodology

1. Empathize

Objective: Understand the needs, challenges, and motivations of potential users of asset-backed investment tokens, including investors, issuers, and regulators.

Activities: Conduct interviews, surveys, and observation sessions with stakeholders. Review existing research and participate in forums or groups dedicated to blockchain and investment to gather insights.

2. Define

Objective: Synthesize insights from the empathize stage to define the core problems users face and identify opportunities for innovation in asset-backed tokens.

Activities: Develop user personas and journey maps to pinpoint pain points and needs. Hold brainstorming sessions to articulate the problem statements clearly, focusing on user needs rather than technical challenges.

3. Ideate

Objective: Generate a wide range of ideas to solve the defined problems, encouraging creativity and leveraging the team's diversity.

Activities: Utilize brainstorming techniques, such as mind mapping or sketching, to explore possible solutions. Encourage wild ideas and defer judgment to foster an open and creative environment. Prioritize ideas based on feasibility, impact, and innovation.

4. Prototype

Objective: Turn selected ideas into tangible prototypes that can be tested with users. These prototypes should be quick and cost-effective, allowing for rapid iteration based on feedback.

Activities: Develop mock-ups or models of the proposed asset-backed token solutions, using tools that range from paper sketches to digital prototypes. Focus on the key features that address the user needs identified in the define stage.

5. Test and Implement

Objective: Validate prototypes through user testing, gathering feedback to refine the solution. Iteration is key in this phase, as feedback may lead to revisiting earlier stages.

Activities: Conduct usability testing sessions with stakeholders, observing their interactions with the prototype and collecting qualitative and quantitative feedback. Iterate on the design based on this feedback, improving the solution until it meets the users' needs effectively.

Chapter 4

Results and Discussions

Calculating a business model is essential for entrepreneurs and investors to estimate potential profits and assess business viability. However, these calculations, based on forecasts and current assumptions, may not always accurately predict future outcomes due to unforeseen changes in market conditions, technology, and regulations. It's important for businesses to recognize that actual results can differ from initial projections. Therefore, planning for uncertainty and being prepared to adjust strategies is crucial for long-term success.

4.1 Car Collateral Asset-Backed Token

Solution Model

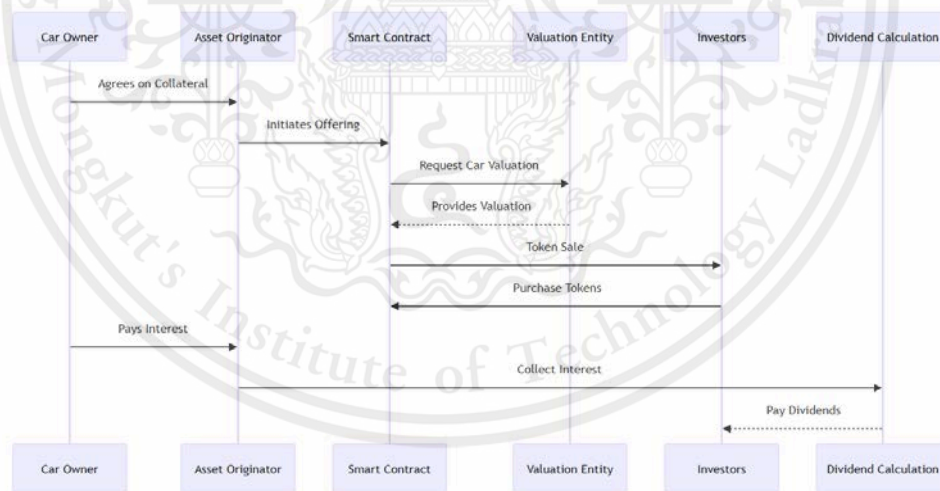


Figure 4.1 The workflow of Car Collateral Asset-Backed Token

The workflow components of a car collateral asset-backed token involving car owners, asset originators, smart contracts, valuation entities, and investors.

Car Owner: The car owner initiates the process by offering their vehicle as collateral for a loan or tokenization. They provide necessary documentation related to ownership, registration, and condition of the car to the asset originator.

Asset Originator: The asset originator, often a financial institution or lending platform, evaluates the eligibility of the car for collateralization. They conduct due diligence on the car owner, assess the market value of the vehicle, and determine loan-to-value ratios. If the car meets the criteria, the asset originator facilitates the tokenization process.

Smart Contract: Smart contracts are deployed on a blockchain network to govern the tokenization and loan processes transparently and automatically. These smart contracts define the terms and conditions of the asset-backed tokens, including ownership rights, loan agreements, and repayment schedules. They ensure that the collateralized assets are securely managed and can be redeemed upon loan repayment or liquidation events.

Valuation Entity: A valuation entity, such as a certified appraiser or automotive expert, assesses the market value of the collateralized car. They provide independent valuation reports to determine the fair market value of the car, which influences the loan amount and tokenization ratio. Their assessment helps mitigate risk and ensures that the tokenized assets are adequately collateralized.

Investors: Investors participate in the asset-backed token offering by purchasing tokenized ownership rights to the collateralized assets. They may include institutional investors, retail investors, or specialized funds seeking exposure to asset-backed securities. Investors receive digital tokens representing fractional ownership of the collateralized assets and potentially earn returns through interest payments or capital appreciation.

Bank	Effective interest rate of car for cash
SCB	5.65% -15%
TTB	5.93% -15%
Krungsri	5.57% -27.69%

Table 4.1 Comparative Car Loan Interest Rates by Bank

In this report, the interest rate chosen for our analysis is derived from those offered by Siam Commercial Bank (SCB), TMBThanachart Bank (TTB), and Krungsri Bank. It's important to note that the interest rates used for our calculations are assumed rates, serving as a basis for comparative and analytical purposes within this context. Consequently, it should be understood that these rates are hypothetical and are utilized to facilitate our analysis; in real-world scenarios, the actual interest rates may vary from these assumptions. This variance could be due to market fluctuations, policy changes, or adjustments made by the banks in response to economic conditions. Therefore, while our report provides valuable insights based on these assumed rates, the actual interest rates applied by SCB, TTB, and Krungsri Bank may differ in practice.

Business Model

Total asset value: 660,000,000 THB

Amount to be raised: 330,000,000 THB

Price per token: 500 THB

Total token for sale: 660,000

Interest rate for borrowers: Car year 2019-2024: 7.5% , Car year 2014-2018: 9.75%
and Car year 2009-2013: 13%

Interest rate for investors: 5.5 % annual interest rate

Calculated Adjusted Net Profit

Total Interest Income from Borrowers: 32,422,500 THB

Total Interest Payments to Investors: 18,150,000 THB

Total Operational Costs 2% of the total capital raised: 6,600,000 THB

Total Losses from default 2% of the total capital raised: 6,600,000 THB

Adjusted net profit: 1,072,500 THB

4.2 Asset-backed investment tokens with land consignment sales

Solution Model

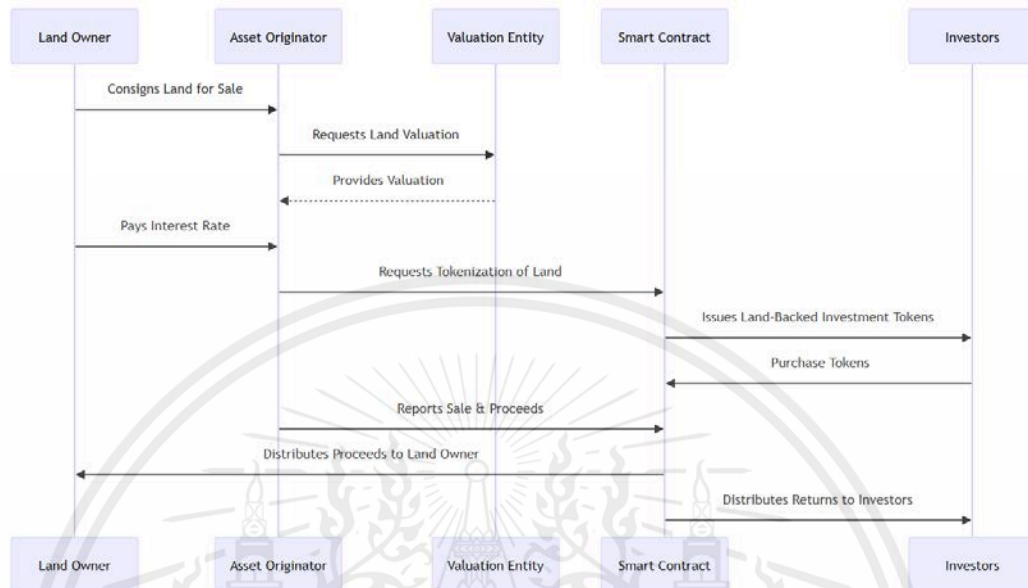


Figure 4.2 The workflow of Asset-backed investment tokens with land consignment sales

The workflow components of an asset-backed investment token with land consignment sales, involving landowners, asset originators, smart contracts, valuation entities, and investors

1. Land Owner: The landowner initiates the process by offering their land for consignment sale or tokenization. They provide necessary documentation related to ownership, boundaries, and legal status of the land to the asset originator.
2. Asset Originator: The asset originator, typically a financial institution or real estate platform, evaluates the eligibility of the land for consignment sale or tokenization. They conduct due diligence on the landowner, assess the market value of the property, and determine consignment sale terms or tokenization ratios. If the land meets the criteria, the asset originator facilitates the tokenization process.

3. Smart Contract: Smart contracts are deployed on a blockchain network to govern the tokenization and sale processes transparently and automatically. These smart contracts define the terms and conditions of the asset-backed tokens, including ownership rights, consignment sale agreements, and distribution of proceeds. They ensure that the consigned land is securely managed and can be redeemed or transferred upon consignment sale completion.
4. Valuation Entity: A valuation entity, such as a certified appraiser or real estate expert, assesses the market value of the consigned land. They provide independent valuation reports to determine the fair market value of the property, which influences consignment sale terms or tokenization ratios. Their assessment helps mitigate risk and ensures that the consigned land is appropriately priced.
5. Investors: Investors participate in the asset-backed token offering by purchasing tokenized ownership rights to the consigned land. They may include institutional investors, retail investors, or real estate funds seeking exposure to asset-backed securities. Investors receive digital tokens representing fractional ownership of the consigned land and potentially earn returns through sale proceeds or appreciation.

Business Model

Total asset value: 660,000,000 THB

Amount to be raised: 330,000,000 THB

Price per token: 500 THB

Total token for sale: 660,000

Interest rate for borrowers: Land value 1M-5M THB:12%, Land value 5M-15M THB:9%, Land value 15M+ THB:7% (Law mandates interest rates must not exceed 15% yearly. Car collateral tokens attract higher rates than land-backed ones due to quicker depreciation, more default risks, and repossession challenges. Land's stability and salability entail lower borrower rates, offsetting car collateral's higher risk.)

Interest rate for investors: 5.5 % annual interest rate

Calculated Adjusted Net Profit

Total Interest Income from Borrowers:31,680,000 THB

Total Interest Payments to Investors: 18,150,000 THB

Total Operational Costs 2% of the total capital raised: 6,600,000 THB

Total Losses from default 2% of the total capital raised: 6,600,000 THB

Adjusted net profit: 330,000 THB

4.3 Comparative Advantage and Disadvantage between Tokens

Car Collateral Asset-Backed Tokenization

Advantages:

Liquidity: Tokenizing car collateral can increase liquidity by allowing fractional ownership and easier transfer of ownership stakes, making it simpler for investors to enter and exit positions.

Accessibility: It lowers the barrier to investment, allowing a broader range of investors to participate in the ownership of high-value vehicles that would otherwise be out of their financial reach.

Transparency: The use of blockchain ensures transparency in ownership records, reducing the risk of fraud and disputes over ownership.

Asset Management: Streamlines the management and tracking of the asset through its lifecycle, from acquisition through to sale, potentially simplifying logistics and record-keeping.

Disadvantages:

Depreciation: Cars typically depreciate over time, which could lead to a decrease in the value of the tokens unless the car is a collectible or rare model that appreciates.

Maintenance and Storage: Physical condition impacts value significantly, requiring ongoing maintenance and proper storage, which can be logistically complex and costly.

Market Volatility: The market for specific vehicles can be volatile, influenced by trends, collector demand, and changes in technology (e.g., the shift to electric vehicles), affecting token value unpredictably.

Regulatory Challenges: The legal framework for tokenizing physical assets like cars is still evolving, potentially introducing legal and regulatory risks for investors.

Asset-Backed Investment Tokens with Land Consignment Sales

Advantages:

Value Appreciation: Land and real estate often appreciate over time, offering the potential for capital gains on top of any income generated through leasing or development.

Income Generation: Tokenized land can generate income through development, leasing, or consignment sales, providing a dual benefit of appreciation and income.

Diversification: Offers investors a way to diversify their portfolio into real estate without the need for significant capital outlays or dealing with the complexities of direct property management.

Security: Real estate is a tangible asset with intrinsic value, offering a more secure investment compared to purely digital assets or speculative ventures.

Disadvantages:

Illiquidity: Despite tokenization, real estate transactions can be slower compared to other assets, affected by market conditions, regulatory approvals, and due diligence processes.

Management Complexity: Real estate involves ongoing management, maintenance, and possibly development, requiring expertise and additional investment.

Regulatory and Legal Issues: Real estate is heavily regulated, and tokenization introduces new complexities in terms of ownership structure, zoning laws, and international investment regulations.

Market Sensitivity: Real estate markets can be sensitive to economic cycles, interest rates, and government policies, potentially affecting the value of investment tokens.

4.4 The platform's website page generate by Figma

4.4.1 Home Page

"The webpage in focus presents "JCar Token". Their primary offering is a unique investment vehicle in the form of asset-backed tokens, with automobiles serving as the underlying collateral.

Central to the user interface are two prominent interactive options:

- Borrower: This option lets car owners get loans using their cars as collateral, keeping ownership while getting funds.
- Invest Now: This invites investors to buy tokens backed by car value, offering a share in returns from the car's value and performance.

The "Connect" button on the top right suggests a feature for visitors to either sign up, log in, or connect their blockchain wallet to interact with the JCar Token platform.

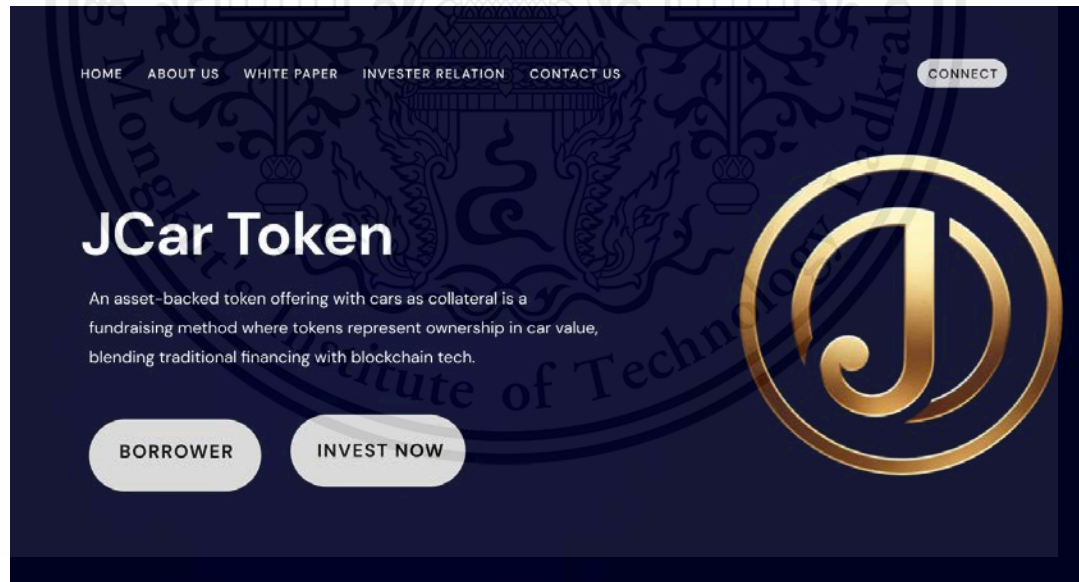


Figure 4.4.1 Home Page

4.4.1.1 Borrower Page

Login Page

This login portal is where borrowers would manage their loans, view the status of their car collateral, or interact with the platform's features.

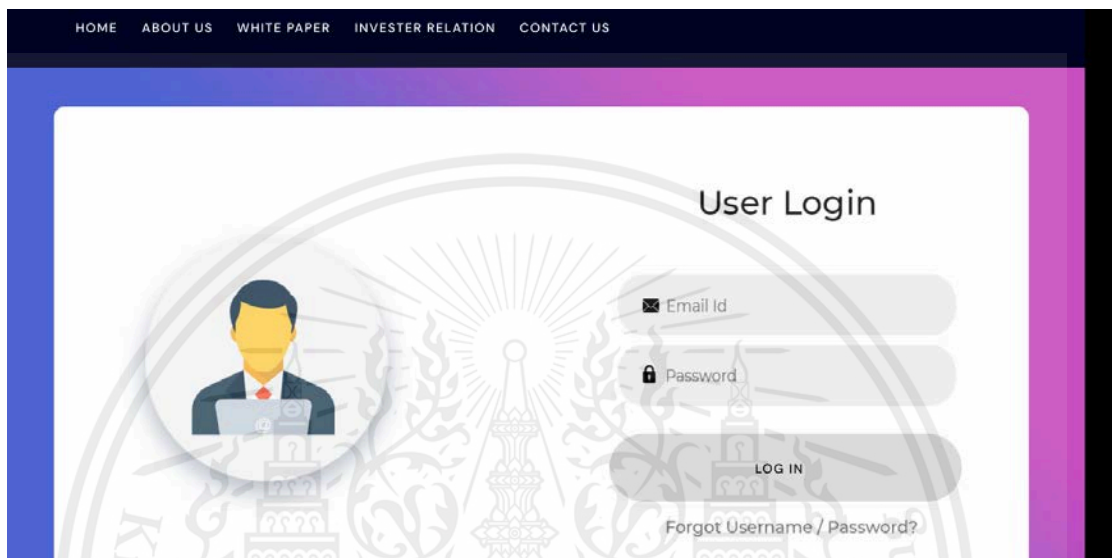


Figure 4.4.1.1.1 Borrower Login Page

Borrower Filling Car Detail Page

This Page is accessed after a successful login by the borrower. It is meticulously designed to capture the essential attributes of the vehicle, which include the make, model, year of manufacture, variant, engine specifications, and transmission type. Each category is accompanied by a dropdown menu, streamlining the selection process. The borrower must fill the detail as follow:

1. Car Brand: The user is prompted to select the make of their car from a dropdown menu.
2. Car Model: Following the brand, the model of the car must be specified.
3. Car Year: This dropdown will likely list the years in which the car could have been manufactured.

4. Car Variant: Here, the specific variant or trim level of the car model is chosen, which can affect the car's value significantly due to different features and specifications.
5. Engine: The user must indicate the type of engine, which may include options based on size, fuel type, and performance level.
6. Transmission: Options here would typically include manual, automatic, CVT, or other types of transmission systems.

HOME ABOUT US WHITE PAPER INVESTER RELATION CONTACT US

Enter Your Details & Get Your Car's Price Instantly

Car Brand
Select Car Brand

Car Model
Select Car Model

Car Year
Select Car Year

Car Variant
Select Car Variant

Engine
Select Engine

Transmission
Select Transmission

2 NEXT

By proceeding, I agree to the Privacy Policy & Terms of Use.

Figure 4.4.1.1.2 Borrower Filling Car Detail Page

Borrower Car Detail Page

The page displays the car's make, model year, and mileage, providing an estimated loan range based on these specifics. A feature to "Add your viewing car point" allows for the arrangement of a physical inspection, a vital step in the loan process, reflecting the platform's emphasis on transparency and thorough evaluation of the collateral.

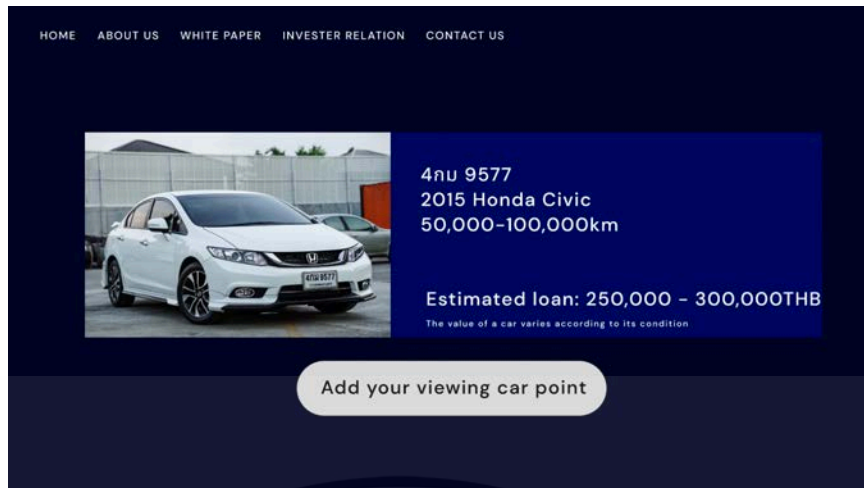


Figure 4.4.1.1.3 Borrower Car Detail Page

Car Viewing Point Page

This page likely appears after the user has clicked the "Add your viewing car point" button, and it's intended for users to specify a location for potential lenders or buyers to physically view the car in question. The map's focus on the user can zoom in and select a precise location within the city or surrounding regions for the car viewing. This tool facilitates the logistical aspect of arranging a car inspection, an important step for completing the collateral verification process for a loan.

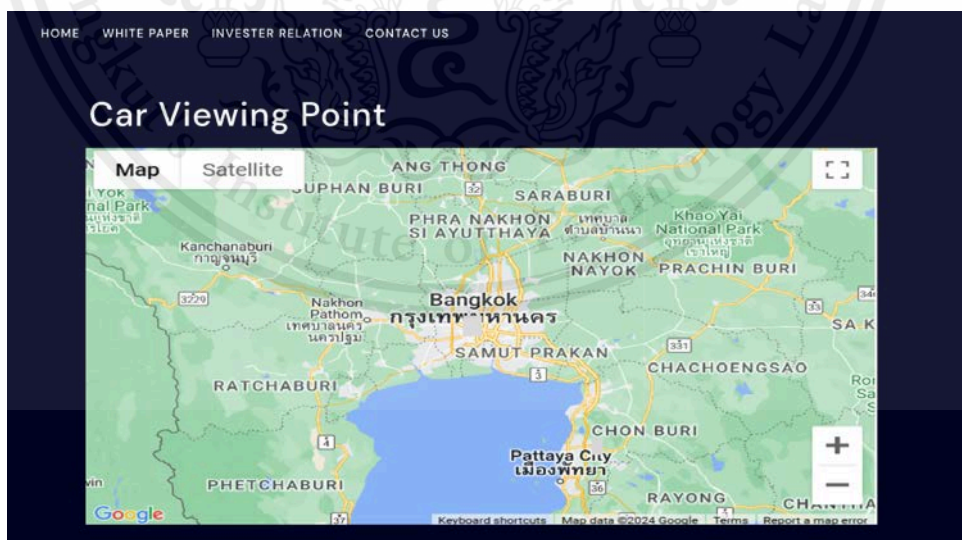


Figure 4.4.1.1.4 Car Viewing Point Page

Inspection Booking Confirmation

The image shows an update within a multi-step process, specifically indicating completion of Step 2. This step involves booking an inspection for the car, which is necessary to assess its condition and determine the best loan offer. The page likely guides the borrower through the required actions to finalize the loan terms, with visual indicators marking progress. A checkmark signifies that booking the car inspection has been accomplished, and the process is moving forward.

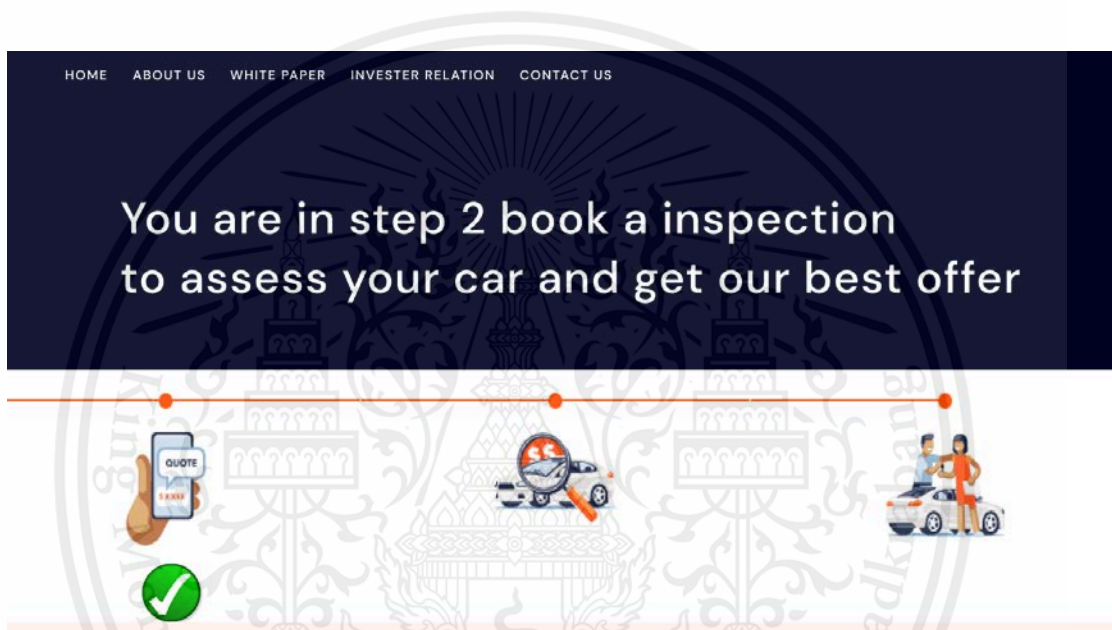


Figure 4.4.1.1.5 Inspection Booking Confirmation Page

4.1.1.2 Investor Page

Activating the "Invest Now" option from the main page directs users to a section highlighting an investment prospect with a unique product token. This segment specifies the commencement date for investment opportunities and delineates the threshold investment amount. Additionally, it provides a preview of the expected returns, stating an anticipated annual income share. The purpose of this interface is to detail the investment product to prospective investors, motivating them to proceed with the investment journey.

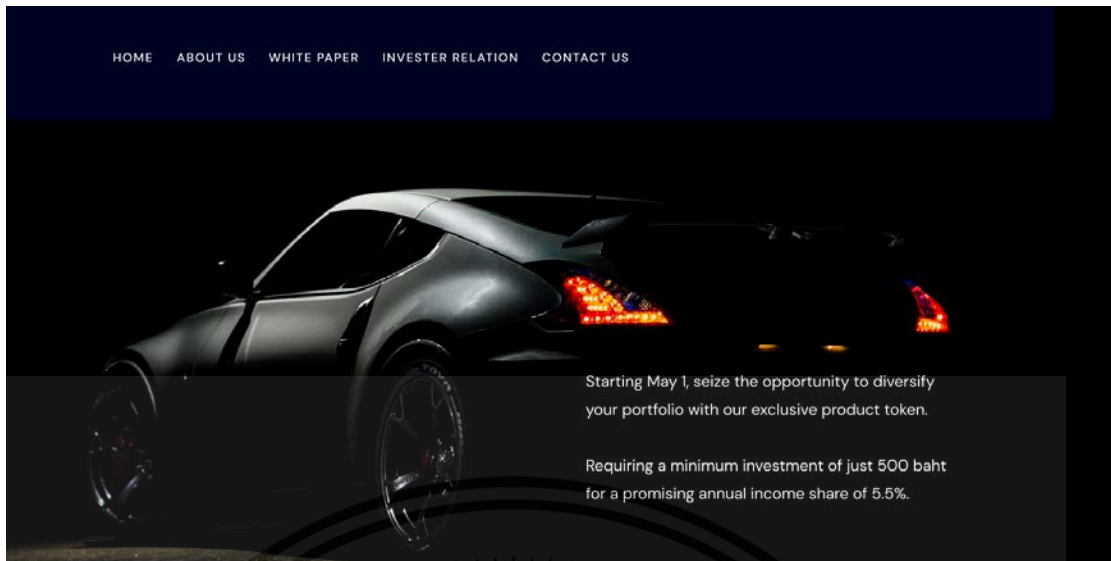


Figure 4.4.1.2 Investor Page

4.4.2 About Us Page

When clicking the "About Us" button, the page detailing the benefits of investing in their token. It begins with a highlight on revenue sharing, noting that token holders can expect a revenue share of 6.5% per annum. Four key reasons to invest in the token are as follows:

1. Diversification: Using cars as collateral offers a way to diversify investment portfolios beyond traditional assets like stocks, bonds, and real estate.
2. Tangible Asset Value: The investment is underscored by a physical asset car which is presented as an advantage over other types of investments that may not be backed by tangible assets.
3. Liquidity through Tokenization: The process of converting car value into blockchain tokens is said to enhance the liquidity of these assets, making it easier to buy and sell stakes.
4. Secured Technology: The use of blockchain and smart contracts is touted for providing a secure and transparent investment experience.

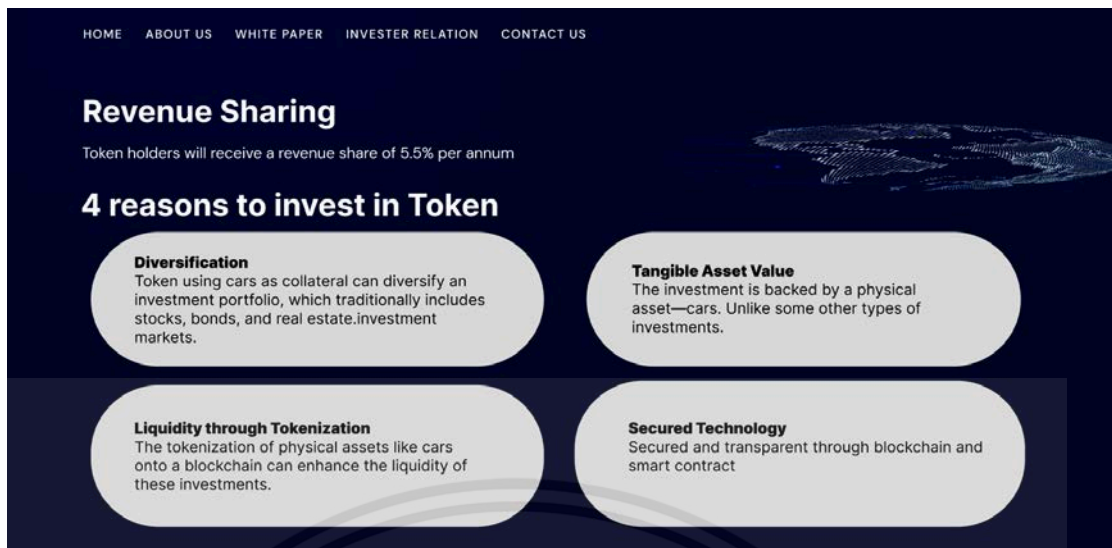


Figure 4.4.2 About Us Page

4.4.3 White Paper Page

The White Paper section on the website introduces visitors to their unique token offering backed by car collateral. By clicking "Open a File," visitors can view the white paper, which dives into the company's strategy for using car ownership to back their tokens.

The white paper breaks down the basics, like how the token system works and how it mixes new blockchain tech with old-school financing to give investors a piece of car ownership through tokens. It explains that the company wants to make investing easier for everyone and points out the perks for both people putting money in and those getting loans.

The white paper also gives an overview of the market for securities backed by assets like cars and where JCar Token fits into that picture. The goal of the white paper is to give potential investors and anyone interested a clear picture of how JCar Token is leading the way in combining investment opportunities with real, physical assets using secure and transparent blockchain technology.



Figure 4.4.3.1 White Paper Page

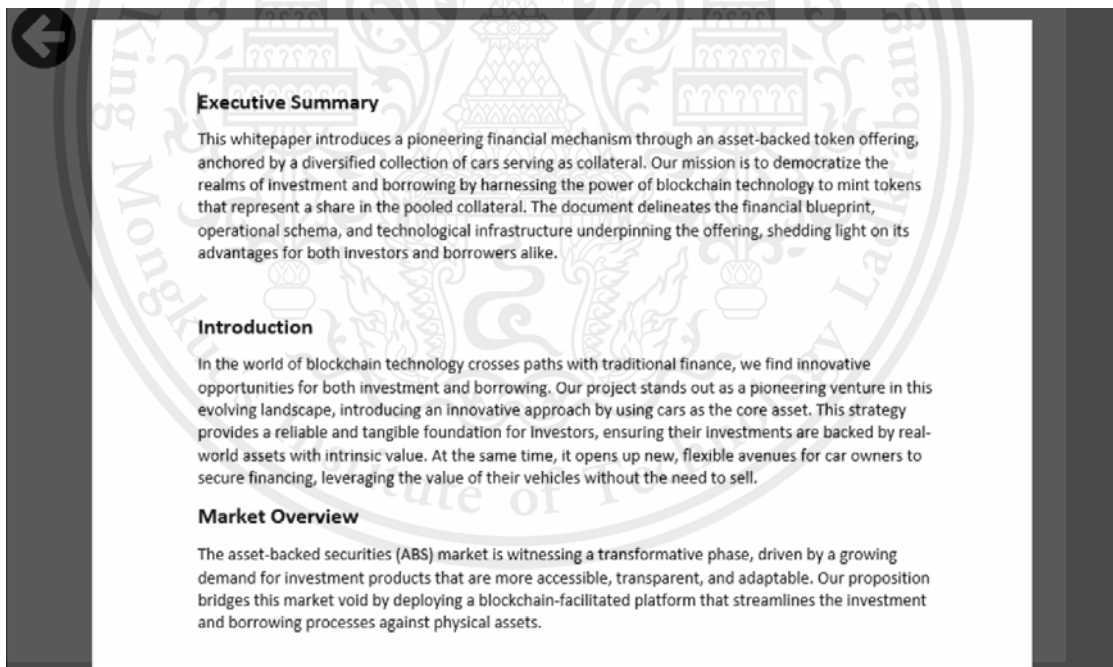


Figure 4.4.3.2 White Paper File Page

4.4.4 Investor Relation Page

The page displayed after clicking the "Investor Relation" link offers resources and updates tailored for current and potential investors. The "Download document" section provides access to important documents, such as the company's Financial Statements and Management Discussion and Analysis, which are critical for evaluating the company's performance and strategic direction.

The "Latest announcement" section appears to display visuals related to recent updates or news, which may include information on the company's latest moves in the market, performance highlights, or changes to their investment products. This part of the website is crucial for keeping investors informed about the latest developments and financial health of the company.

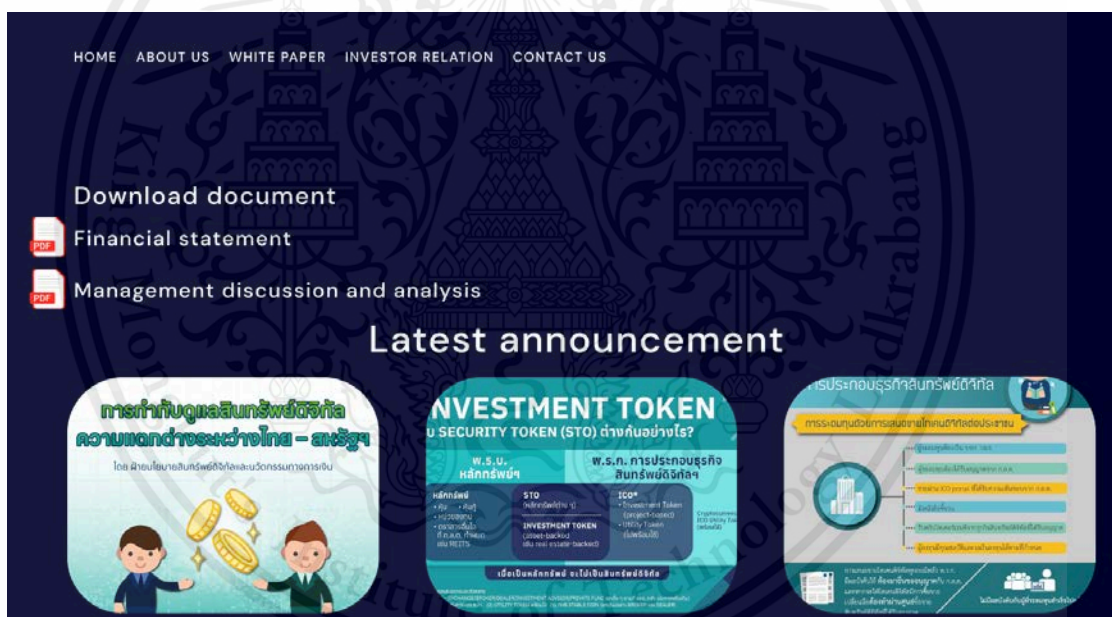
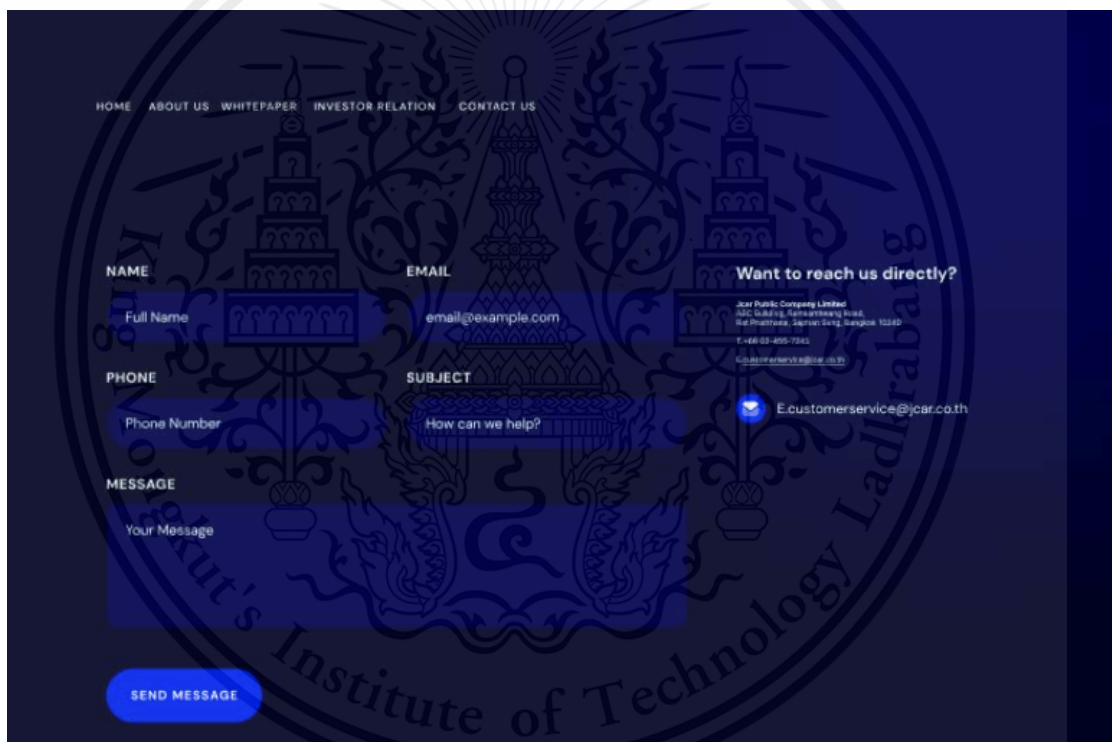


Figure 4.4.4 Investor Relation Page

4.4.5 Contact Us Page

This page provides a form for visitors to get in touch with the company. It asks for the visitor's name, email address, phone number, and the subject of their inquiry, as well as a space for the message they wish to send. There's a "Send Message" button for submitting the form. On the right, there's information for direct contact, including an email address, which offers an alternative way of reaching out to the company's customer service or support team. This page is designed for queries, support requests, or any other communication visitors may wish to have with the company.



HOME ABOUT US WHITEPAPER INVESTOR RELATION CONTACT US

NAME
Full Name

EMAIL
email@example.com

PHONE
Phone Number

SUBJECT
How can we help?

MESSAGE
Your Message

Want to reach us directly?

JCAR Public Company Limited
JCC Building, Rama 9 Road
10310 Pracha-Uthit Road, Pracha-Uthit, Bangkok 10310
T: +66 23 450 7242
A: +66 23 450 7243
E: customer.service@jcar.co.th

E: customer.service@jcar.co.th

SEND MESSAGE

Figure 4.4.5 Contact Us Page

Chapter 5

Conclusion and Recommendations

5.1 Conclusion

This thesis embarked on an exploratory journey to assess the feasibility and impact of asset-backed investment tokens, with a particular focus on utilizing cars and land as underlying collateral. The endeavor was not just academic; it aimed to bridge the gap between traditional asset management practices and the burgeoning domain of digital tokenization. The research presented a thorough examination of the potential for tokenization to enhance liquidity, transparency, and efficiency in asset-backed investments. Through empirical analysis, case studies, and engagement with theoretical frameworks, this study illuminated the opportunities and challenges that come with the development and analysis of asset-backed investment tokens.

The practical applications demonstrated within this thesis, particularly the car collateral asset-backed token and the asset-backed investment token with land consignment sales, showcase the innovative ways blockchain technology can be leveraged to create more accessible, transparent, and efficient investment products. These models not only serve as a testament to the potential of digital tokens in revolutionizing asset management but also highlight the intricacies and regulatory considerations that come into play.

5.2 Recommendations

Based on the findings and insights garnered from this research, the following recommendations are proposed for future work in the development and analysis of asset-backed investment tokens:

1. **Further Research and Development:** Continued exploration into other asset classes that could benefit from tokenization is recommended. This could include more volatile assets or those traditionally considered illiquid, assessing the unique challenges and benefits each class offers.
2. **Regulatory Engagement:** It is imperative for future projects to engage proactively with regulatory bodies. Establishing a clear legal framework around tokenization will be crucial for the widespread adoption and success of asset-backed tokens.
3. **Technology Advancements:** Emphasis should be placed on developing and utilizing advanced blockchain technologies that offer enhanced security, scalability, and interoperability between different platforms and asset types.
4. **Market Education and Adoption:** Initiatives aimed at educating potential investors and the broader market about the benefits, risks, and mechanisms of asset-backed tokens are essential. This will help in building trust and facilitating broader adoption.
5. **Risk Management Strategies:** As with any investment product, comprehensive risk management strategies should be developed and implemented to protect the interests of all stakeholders involved, particularly in the context of the volatile cryptocurrency market.

In conclusion, the development and analysis of asset-backed investment tokens present a promising avenue for innovation in financial engineering. While challenges remain, particularly in terms of regulatory compliance and market acceptance, the potential benefits in terms of enhanced liquidity, access to capital, and investment opportunities are significant. This thesis lays the groundwork for further exploration and innovation in the field, aiming to contribute to the evolution of financial markets in the digital age.

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Appendix A

For an interactive view of the user interface and user experience designs created for the "JCar Token" platform, please refer to the Figma project available at the following link:

[https://www.figma.com/file/z4z6t6q3hrn8xgMkslDaen/FinanceFlow%3A-Website-Template-for-Finance-startups-\(Community\)?type=design&node-id=2%3A413&mode=design&t=gMsBPcERFHefhIRN-1](https://www.figma.com/file/z4z6t6q3hrn8xgMkslDaen/FinanceFlow%3A-Website-Template-for-Finance-startups-(Community)?type=design&node-id=2%3A413&mode=design&t=gMsBPcERFHefhIRN-1)

This Figma project provides a comprehensive view of the design process, including various iterations, user flows, and final implementations for the platform. Readers are encouraged to explore the design elements in detail, which includes navigating through different pages and examining the interactive elements of the platform interface.