



GARUDA HACKS 6.0

Transforming Waste into Worth through



LimbahKu

**Connecting households, collectors, and local
MSMEs to enable a more efficient, traceable, and
inclusive waste ecosystem**

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The image shows a screenshot of the LimbahKu mobile application. The background features a scenic view of a body of water with wind turbines in the distance. The app's logo, a stylized plant icon, is visible in the top right corner. Below the logo, the text "Turn Your Waste into Worth" is displayed. A paragraph of text explains the app's mission: "We believe that everyone has the power to drive change. Through *LimbahKu*, we empower individuals to manage and sell their waste responsibly. Reducing environmental impact, supporting local waste collectors, and paving the way for a cleaner, more sustainable future." At the bottom of the screen, there is a white button labeled "Join now".



BACKGROUND ANALYSIS

SCQ Breakdown – Why *LimbahKu* Matters



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SITUATION



MSMEs contribute 61% to Indonesia's GDP and employ over 97% of the workforce, yet many still lack sustainable business practices.

Indonesia faces a growing waste crisis, with 33.7 million tons generated in 2024 and 40% remaining unmanaged, much of it tied to MSME-related consumption. Without a green transition.



A significant portion of this waste is linked to consumption and production patterns driven by MSMEs, such as excess packaging, unsold inventory, and food scraps.

COMPLICATION

Low ESG Adoption Among MSMEs

Despite their economic importance, most MSMEs have not integrated green practices or ESG frameworks into their operations.

Lack of Awareness and Infrastructure

Over 80% of MSMEs lack the awareness, capacity, or infrastructure needed for sustainable business practices, with many perceiving ESG as irrelevant or too costly.

Environmental Impact of Informal Waste

Household and informal sector waste, including from MSMEs, continues to pollute the environment, obstructing Indonesia's progress toward SDG and clean economy targets.

QUESTION

How can Indonesia leverage the vast ecosystem of UMKM to accelerate adoption of practical green practices and circular economy models, by advancing key SDGs and embracing ESG frameworks?



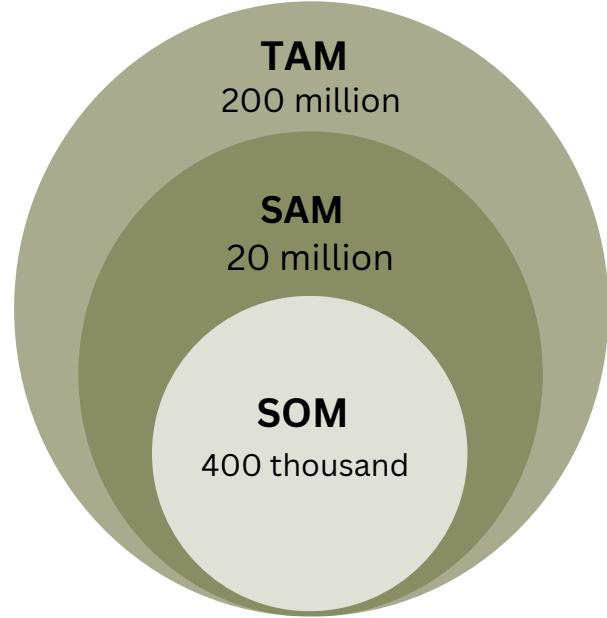
MARKET ANALYSIS & STP ANALYSIS

Large market potential and competitive advantages position



LimbahKu

Market Analysis



- TAM**
All Indonesians, excluding people age under 17) who generate waste.
- SAM**
The segment of the population that aligns with Limbahku's initial focus.
- SOM**
The portion of the market realistically reachable in the first 3-5 years.

KEY ASSUMPTION

- Around 200 million Indonesians are aged 17 and above, forming the Total Addressable Market (TAM).
- 10% of the TAM (≈ 20 million) are considered reachable and relevant, forming the Serviceable Available Market (SAM).
- 2% of the SAM ($\approx 400,000$) are likely early adopters, forming the Serviceable Obtainable Market (SOM).

STP Analysis

Segmentation

Demographic

Individuals aged 17+, primarily business owners or decision-makers in MSMEs.

Geographic

Urban and peri-urban areas across Indonesia with high MSME concentration.

Behavioral

Environmentally conscious, open to innovation, seeking cost-effective and sustainable practices.

Psychographic

Progressive mindset, motivated by impact, community-driven, and future-oriented (aligned with ESG/SDG goals).

Targeting

We focus on digitally accessible MSME owners located in urban regions, prioritizing eco-aware entrepreneurs and early adopters of sustainable models. Our main emphasis is on MSMEs operating in industries with a visible environmental footprint, such as food and beverage, fashion, and crafts.

Positioning

We position the platform as a simple, practical, and affordable enabler for MSMEs to adopt green practices and ESG principles. The value proposition highlights long-term savings, regulatory readiness, enhanced brand trust, and meaningful contributions to national goals such as the SDGs and ESG.

SOLUTION

The Main Piece of Our Puzzle - *LimbahKu*

Key Drivers



Indonesia produces **18.2 million tons** of plastic waste per year, with 39% mismanaged (World Bank, 2024).



Only **7%** of waste in Indonesia is recycled, leaving a huge untapped opportunity (UNEP, 2024).



About **45%** of MSMEs are increasingly interested in adopting ESG practices, especially in urban areas (Katadata Insight Center, 2024).



The recyclable waste market in Indonesia is estimated to be worth **over USD 1.5 billion** annually (McKinsey, 2024).

Objective

To digitize and democratize waste management in Indonesia by enabling communities and MSMEs to monetize waste while advancing ESG and sustainability goals.

Application Overview

Types of Users



Waste Seller

Target

Households and MSMEs

Description

Users who sell their waste to earn extra income while promoting sustainability.



Waste Buyer

Target

Waste Collectors & Aggregators

Description

Users who buy waste directly from sellers for further processing or resale.

Use cases

Waste Seller



Register / Login

Allow users to create an account or log into the app.



Edit Profile

Enable users to update personal and contact information.



Chatbot

Provide instant assistance and guidance through an in-app chatbot.



Sell Waste

Let users submit waste listings for collectors to view and respond.

Waste Buyer



Register / Login

Allow users to create an account or log into the app.



Edit Profile

Enable users to update personal and contact information.



Process Waste Delivery

Allow buyers to manage and confirm the logistics of received waste.



Accept / Decline Waste Delivery Requests

Enable buyers to respond to incoming waste sale offers.

Impact

+30%

+10.000

Reduce unmanaged urban waste by 30% by 2030 through digitalized waste collection and resale.

Empower 10,000+ MSMEs to implement sustainable waste practices via a simple mobile solution.

+30%

+10.000

Contribute to Indonesia's target of reducing ocean plastic waste by 70% by 2025 (Kementerian Lingkungan Hidup dan Kehutanan).

Improve economic value of waste for local communities by enabling direct selling to waste collectors, reducing middlemen loss.

USER INTERFACES

The Main Piece of Our Puzzle - *LimbahKu*



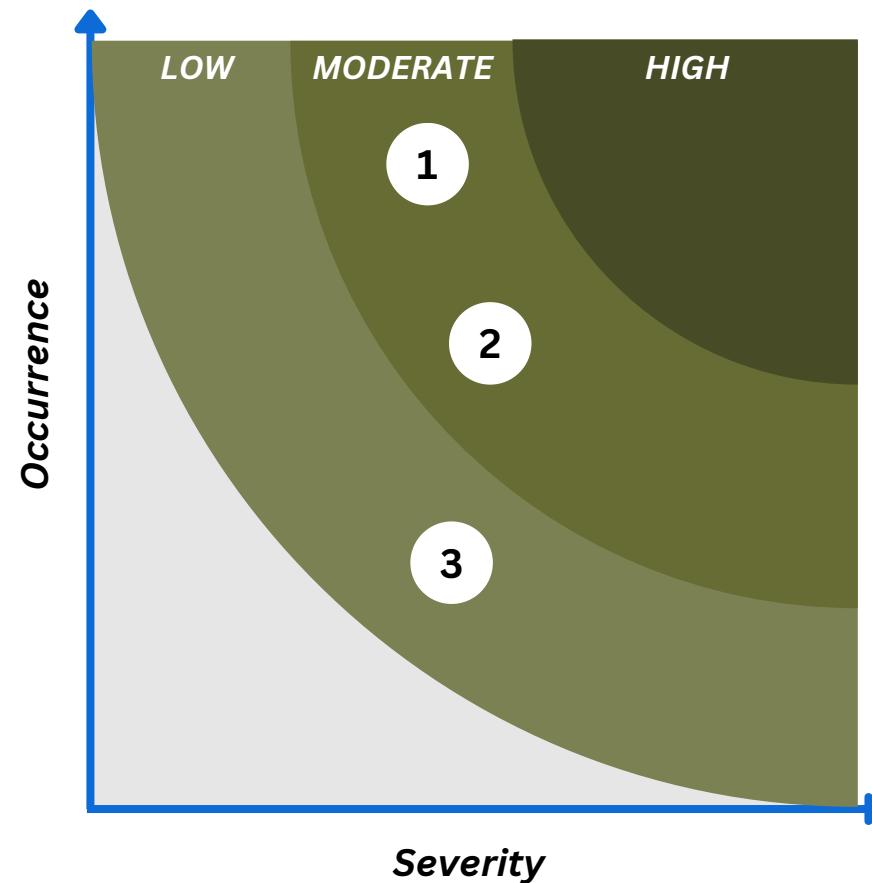
Landing Page

Home Page

Marketplace Page

Register Page

Risk Matrix



Technical Feasibilities Studies Using Risk Management

These are the key risks identified...

1

Low digital literacy among targeted users

2

Lack of awareness or interest in sustainability

3

Scalability and infrastructure limitations

Which can be averted through...

Provide user-friendly interfaces, visual guides, and onboarding tutorials to ensure ease of use.

Launch targeted awareness campaigns and showcase success stories to build motivation and relevance.

Start with focused regional rollouts, then gradually expand while monitoring infrastructure needs.

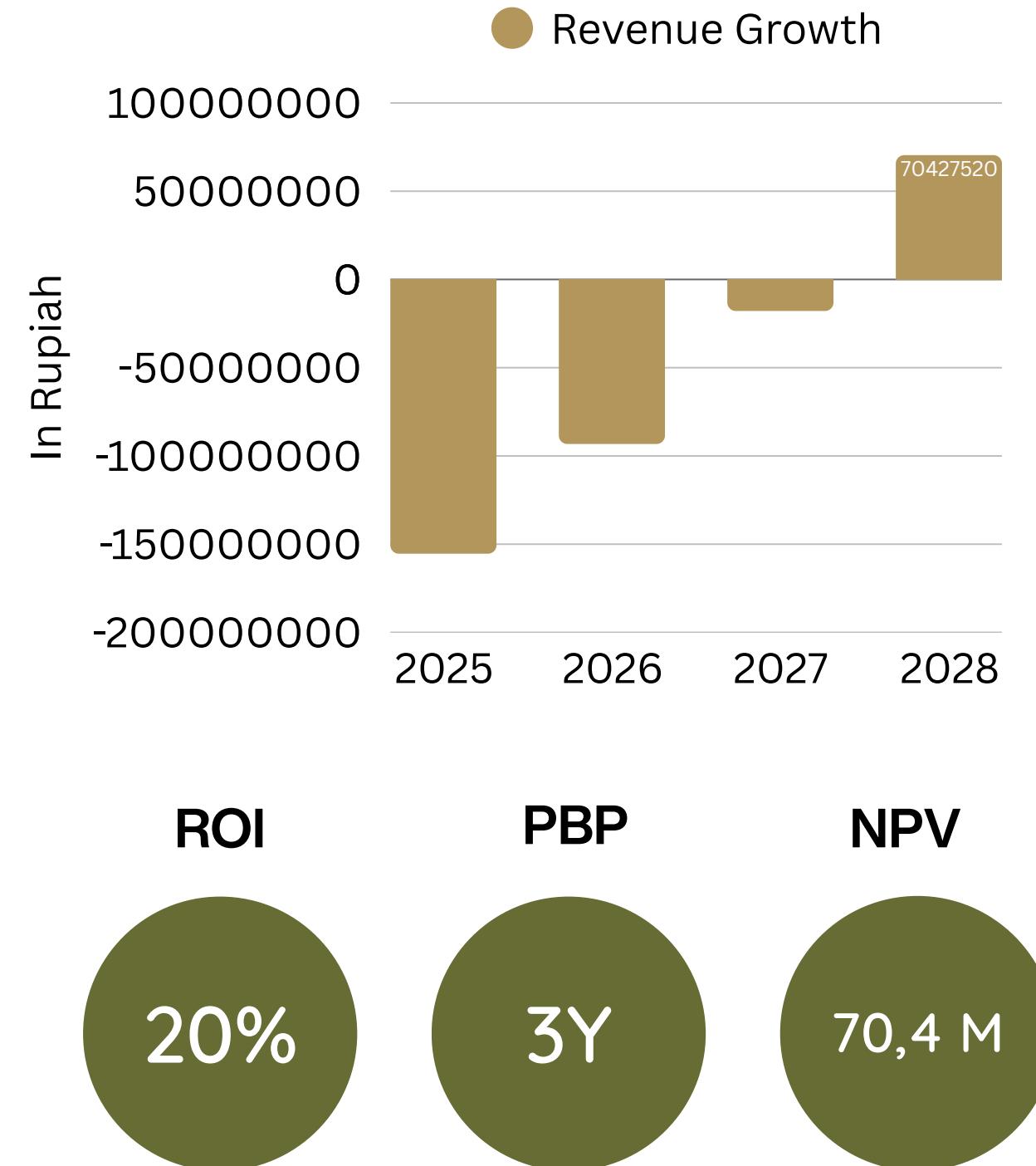
FINANCIAL PROJECTION

Fueling Scalable Growth with Smart Execution and Solid Financial Projections



LimbahKu

Financial Projection



Interpretation

In the first year, we estimate around 500 transactions per month, with an average transaction value of IDR 60,000. The platform will take 20% commission from the gross merchandise value (GMV), resulting in the annual revenue after multiplying by 12 months.

Each year, we expect a user and transaction growth of approximately 20%.

The expenditure in the first year is projected to be IDR 249 million, covering platform development and operational costs. For the following years, the expenditure is estimated to decrease significantly to IDR 44 million annually, focusing mainly on operational and maintenance costs.



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THANK YOU

APPENDIX

FINANCIAL PROJECTION - CASH OUTFLOW

Cash Outflow Projection

Development Cost

Item	Monthly Cost	Duration (months)	Total
Frontend Developer (1 pax)	6,000,000	4	24000000
Backend Developer (1 pax)	7,000,000	4	28000000
UI/UX Designer (1 pax)	6,000,000	4	24000000
QA Tester (1 pax)	5,000,000	4	20000000
Project Manager (1 pax - part time)	7,000,000	4	28000000
Subtotal			124000000

Infrastructure and Tools

Item	Monthly Cost	Duration (months)	Total
Cloud Hosting	1,000,000	6	6000000
Database and Storage Services	1,000,000	6	6000000
Domain + SSL Certificate	-	12	500,000
Design Tools	500,000	4	2000000
Project Management Tools	500,000	6	3000000
Subtotal			17500000

Total

Development Costs	124,000,000
Infrastructure and Tools	17,500,000
Marketing and Outreach	42,000,000
Miscellaneous	21,500,000
Operational Costs	44,000,000
Total	249,000,000

Marketing and Outreach

Item	Est. Cost
Landing Page and Promo Assets	2,000,000
Social Media Ads	20,000,000
Partnership and Community Outreach	20,000,000
Subtotal	42,000,000

Miscellaneous

Item	Est. Cost
Legal and Admin	1,500,000
Contingency Costs	20,000,000
Subtotal	21,500,000

Operational Costs

Logistics Partnerships	40,000,000
Admin and Operations	1,500,000
Server Hosting and Cloud	2,500,000
Subtotal	44,000,000

Year 2, 3, ...

44,000,000

FINANCIAL PROJECTION - CASH INFLOW

Cash Inflow Projection

Transactions	Avg. Value (Rp)	GMV (Rp)	Revenue (20%) (Rp)
650	60,000	39,000,000	7,800,000

Year 1 $7,800,000 \times 12$ 93,600,000

Note :

GMV (Gross Merchandise Value) = Total Transactions x Avg Transaction Value

First Year : 650 transactions per month

Each transaction costs 60,000