Micro Tuber

SMART FARM TECHNOLOGY MICRO TUBER

WHITE PAPER Ver.2

CONTENTS

1 SEED INDUSTRY

WHY IS SEED INDUSTRY CALLED A SEMICONDUCTOR OF AGRICULTURE?

1-1
Significance

· The seed industry provides the basis for maintaining agriculture by supplying seeds, an essential element in agricultural production. The seed industry, called "the semiconductor of agriculture" because of its high value added, is an industry that develops and produces seeds such as various crops and livestock and distributes them to farmers.

1-2
Status

· Seed industries around the world are led by large multinational corporations located in the United States, Europe, Japan, etc. In Korea, public institutions directly improve food crop seeds and supply them to farmers, but private companies are leading the seed industry for agricultural products such as vegetables and fruits. Although many private seed companies suffered a seed industry crisis during the 1997 IMF bailout, including the merger of foreign companies, efforts have recently been underway to restore seed sovereignty and replace imported seeds with domestic seeds.
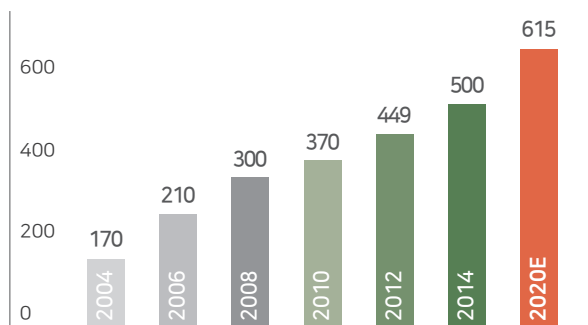
1-3
Market Size

· The world's seed-related industry is estimated at $78 billion. This is more than twice as large as $30 billion in the semiconductor (DRAM) market, and the global seed market is growing at a 5% annual rate.   As a result, countries are putting their utmost efforts into preserving the seeds.

· According to the International Seed Federation (ISF) in 2013, it occupies the global seed market with $12 billion in the U.S., $9.9 billion in China, $2.8 billion in France and $400 million in South Korea.
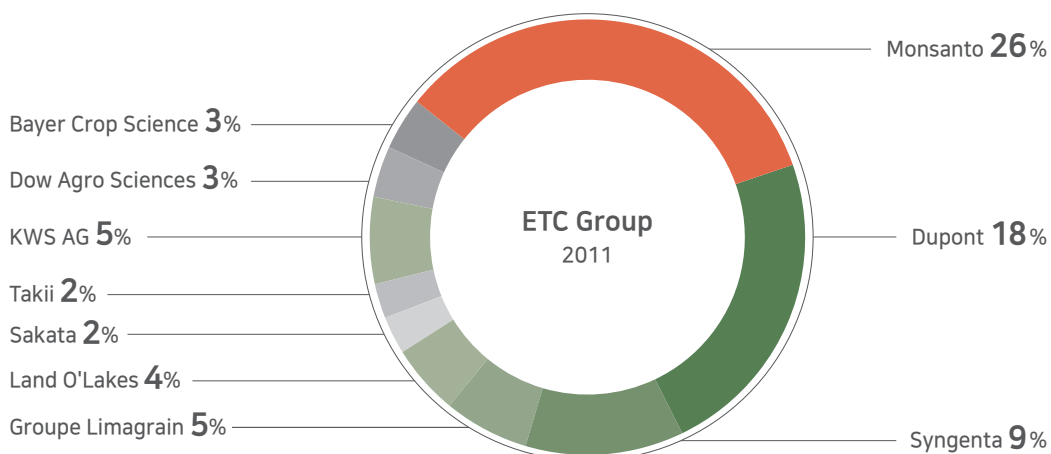
2013 International Seed Federation

NETHERLANDS 560Mn
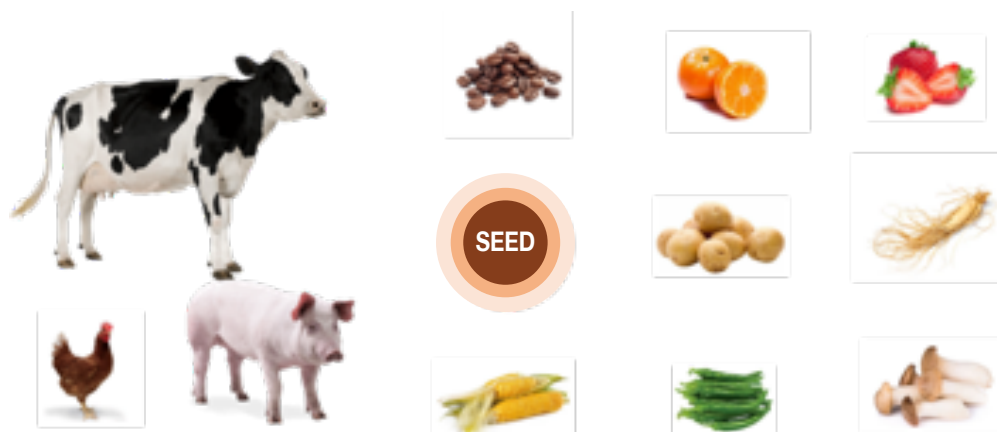CHINA 9.9Bn
JAPAN 1.4Bn
USA 12Bn
FRANCE 2.8Bn
KOREA 400Mn
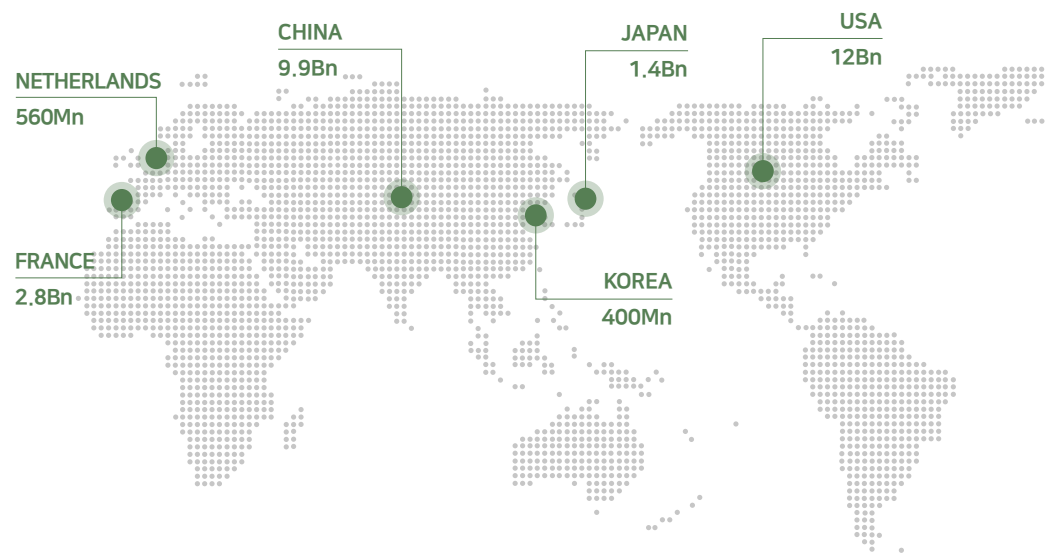
· The U.S. and China are waging a silent war in the seed markets. According to AgroPages, U.S. companies ranked first and second in sales in 2017 and the Chinese companies ranked third. Monsanto, a U.S. company, was acquired by Bayer of Germany, which ranked fifth last year. China, a latecomer, is dreaming of becoming a powerful country of seed by buying foreign companies.

Global Seed Market Database

Monsanto **26**%

Bayer Crop Science **3**%

Dow Agro Sciences **3**%

KWS AG **5**%

Takii **2**%

Sakata **2**%

Land O'Lakes **4**%

Groupe Limagrain **5**%

ETC Group
2011

Dupont **18**%

Syngenta **9**%

1-4
Types

1-5
Problems

· The market share of the world's top 10 seed companies is close to 77 percent as of 2011. The fact that a small number of companies occupy the seed market fuels seed monopoly concerns. The top four seed companies are supplying more than half of the seeds distributed worldwide. Furthermore, if these companies fail to produce seeds, they will have a huge impact on food supply and demand worldwide.

The market share of the world's top 10 seed companies	**77**%

· It is GMO that has fueled seed monopoly. When GMO was first invented, controversy arose over food stability, but recently proved its stability, giving more room for acceptance in the food sector in the future. With Monsanto being the forefront of GMOs, most companies have switched focus to GMOs. The development of GMOs has allowed companies to develop various seeds in a short period of time. Ironically, however, GMO, which allows the development of various seeds, rather encourages the unification of seeds and corporate monopoly. Monsanto's representative GMO crop is the 'Round-up ready' soybeans. Monsanto initially did not mention royalties when they spread the bean seeds to Argentina. However, as the cultivation of Monsanto GMO soybeans spread over time, the company demanded a three-year patent fee and won the legal battle to receive 1 percent of its sales from farmers. GMO crops are automatically destroyed when they are harvested, so they must continue to purchase new seeds after harvest. In other words, farmers have to pay royalties to companies and buy seeds every year.

Farmer → **Royalty** → Company
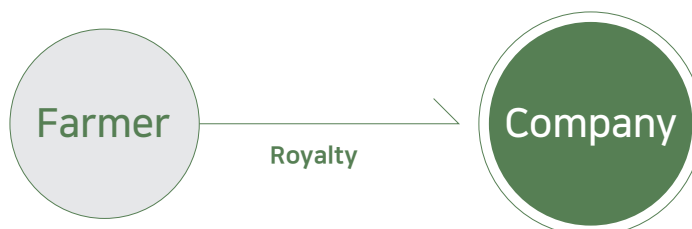
· As seed companies (Heungnong Jongmyo, Jungang Jongmyo, and Seoul Jongmyo) were sold to foreign multinational companies such as Monsanto during the IMF economic crisis, the foundation of the domestic seed industry almost collapsed. For this reason, Korea has far more royalty payments for seed imports than for royalty income from seed exports. Rural Development Administration estimated that seed royalties paid by South Korea to foreign countries in 2011 were about 17.2 billion won, and that if the trend continues, the royalties to be paid in 2020 will reach 790 billion won.

Royalties paid by Korea in 2011	**17.2**Bn ₩	Royalties paid by Korea in 2020	**790**Bn ₩

1-6
Detailed Case

BT cotton Crisis in India

In 2002, Bt cotton was commercialized in India.
In order to plant Bt cotton in India, Monsanto spent heavily on marketing campaign and promoted that if you buy Bt cotton seeds, you can become rich. Thus, Indian farmers spent a heavy amount of money on buying Bt seeds from Monsanto. In the past, farmers who planted various seeds such as black beans, mung beans, sesame seeds, and native cotton, only grew Bt cotton while purchasing cotton seeds. This amounts to 90% of the cotton grown in the area. But the issues started forming then. The toxin in Bt cotton, which was said to be able to fight off pests without pesticides, lost its effectiveness and forced the farmers to purchase pesticides from Monsanto to eliminate pests. There was also an obstacle called climate change. If farming was done in various ways, climate change would not have ruined the farms, but farmers who already planted only one Bt cotton had no countermeasures against climate change. This ruined the farms. The Indian farmers who used to pay more than four times the price were devastated. Far from being rich, this has ruined the farms. Indian farmers suffered severe hardships and 200,000 farmers took their own lives from this incident in a 10 year time span. This is a suicide rate of one person every 30 minutes.

※ Bt = Bacillus thuringiensis (GM cotton introduced with pest resistance gene)

Commercialization
of **BT cotton**
in India

BT cotton
occupies **90%**
of cotton area

200,000
farmers
suicide

1-7
Solution

· Monsanto, the world's largest seed company, has 10.7 billion U.S. dollars in annual sales as of 2014. Large multinational companies already dominate the global seed market, and it is impossible for small companies to catch up with them. Long-term research should be supported. The seed industry is a knowledge-based industry that produces results through long-term research of at least seven to ten years. In order to survive the seed war, a significant portion of sales must be poured into R&D.

At least **7-10yrs.** Industries investing in long-term R&D

2 SEED POTATO

THE MOST PRODUCTIVE CROP PER UNIT AREA
WORLD'S 4 MAJOR FOOD CROPS

2-1
POTATO

· Potatoes are known as the most ideal combination of nutrients, as they are called "Apples of the ground" in France, "Pears from the ground" in Germany and "Second bread" in Russia. Potatoes are boiled, served as a meal or snack, baked or fried. It is used as a raw material for Soju and alcohol, and potato starch is used as a raw material for sweet noodles and various industrial use.

· In terms of nutrition, potatoes are nearly perfect as a single food crop. They contain not only various nutrients such as carbohydrates, proteins, fats, calcium, phosphorus, iron, etc., but also various vitamins necessary for human survival. It is no exaggeration to say that it is the major food crop of the future that has great ratio of nutrients. Furthermore, potatoes are used in various food processing industries, such as potato starch, potato chips, French fries, medical capsules using vaccine development and potato starch, and industrial materials (makeup products, packs, whitening effects, etc.) are rapidly developing and expanding worldwide.
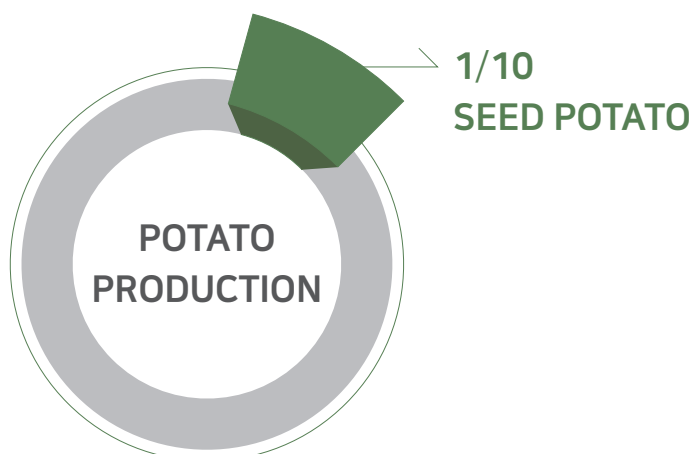
4 Major Food Crops — Rice — Wheat — Corn — **Potato**

2-2
SEED POTATO

· Potatoes are nutritious crops that can be re-planted to continue growing more potatoes. About one-tenth of the potatoes produced in the previous year are stored as seed potatoes every year.
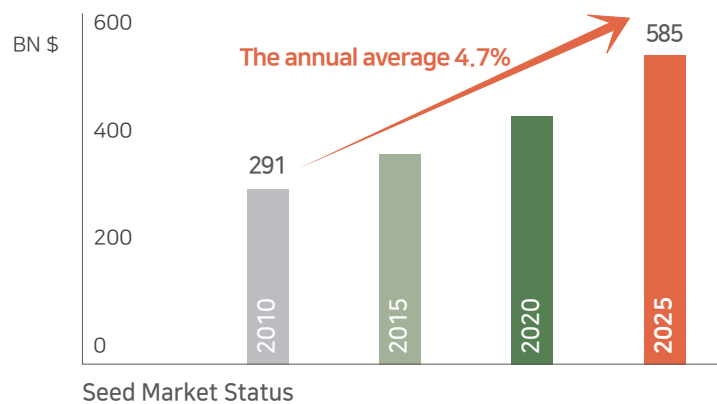
1/10 SEED POTATO

POTATO PRODUCTION

2-3
MARKET STATUS

· Continued population growth and economic development in population giants such as China and India have led to a surge in food consumption, threatening global food resource security. In order to promote the research of potato farming by governments around the world amid the international food supply crisis, the UN designated 2018 as 'the International Year of the Potato (IYP)', saying, "If there is a food crisis in the future, only potatoes will save mankind." The economic development of these large populations is a threat to food security and is also a great opportunity for the development of seed industries.

BN $

The annual average 4.7%

600

585

400

291

200

0

2010   2015   2020   2025

Seed Market Status

2-4
SEED POTATO
PROBLEM

· The most problematic factor in seeds of nutritional crops such as potatoes is the next-generation delivery of viruses and infection through reproduction. In other words, securing a good seed potato means securing and preparing a seed potato that is not infected by the virus or even if it is infected, it is minor and does not significantly reduce productivity. Countries that value potato farming are investing huge amounts of state budget, research personnel and facilities to establish a more efficient seed potato production and supply system so that they can distribute high-quality, disease-free seed potatoes to their farmers.
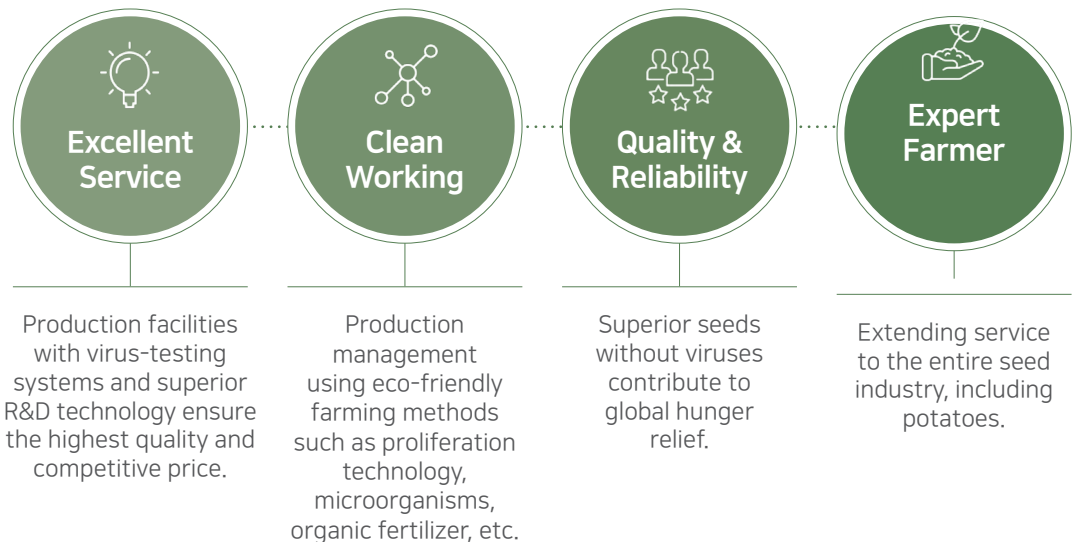
3

MICROTUBER COMPANY

GLOBALIZE KOREAN SEED

3-1 INTRODUCTION

· MICROTUBER incorporates a state-of-the-art proliferative technology in producing seeds through the MICROTUBERFARM system. MICROTUBERFARM system consists of eco-friendly agricultural systems that massively multiplies nutrients, flavor, insect-resistant seeds, and quickly manages the entire distribution logistics through the TSCM (Microtuber Supply Chain Management) platform.

Excellent Service	Clean Working	Quality & Reliability	Expert Farmer
Production facilities with virus-testing systems and superior R&D technology ensure the highest quality and competitive price.	Production management using eco-friendly farming methods such as proliferation technology, microorganisms, organic fertilizer, etc.	Superior seeds without viruses contribute to global hunger relief.	Extending service to the entire seed industry, including potatoes.

3-2 FOUNDERS

EDWARD WONIK YI
Chairman

· **MICROTUBER Chairman**
· GROUP TK Chairman
· Golden Lion Group Chairman
· Grand Master of World Tuckong Moosul Federation
· Korean American Entrepreneurs Federation Chair man
· Over 38 Years of International Business

EDWARD YI
CTO

· **MICROTUBER Chief Technology Officer**
· Rock'n'Block President
· GROUP TK Chief Technology Officer
· BlackShield Chief Security Officer
· Renowned Blockchain Expert

3-3
CERTIFICATES

Business Registration

Trademark Registration

Business Registration for Seed

Organic Agricultural Crop

4

ABOUT MICROTUBER
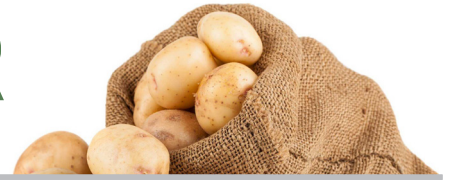
WORLD'S FIRST SEED PLATFORM

4-1
MICROTUBER BEGINS

· It is necessary to implement new technology in this industry to respond to new environmental changes in agriculture, and to promote projects to achieve the second semiconductor revolution, the seed revolution. To ensure the competitiveness of the seed industry, it is essential to establish seed development techniques in respond to the value movement and market movement of agriculture. This requires supply stability, disease tolerance for maximum yield, uniformity and storage for high-quality seed development. Also, seed development technology that focus on each step.

Response to new environmental changes in agriculture	Promoting the seed revolution project	Develop high-quality and high-functioning seeds

· MICROTUBER will have a ripple effect on the agriculture industry, and this will be an opportunity and a driving force to lay the foundation for an innovative system that shifts from a simple food production industry to a high value-added seed production industry.

4-2
THE REASON MICROTUBER STARTED WITH SEED POTATO

1 Potatoes, one of the four major food crops, is the most productive crop per unit area.

2 Potatoes can be cultivated even in barren soil because the growing conditions are not difficult.

3 Potatoes can be harvested in three to four months.

4 Potatoes have long been a grateful crop that has fed poor and hungry people. It is a source of food for the world that can solve hunger.

5 MICROTUBER succeeded in developing and commercializing a technology that could mass-produce potato stems at a reasonable price through plant tissue culture technology, enabling the supply of top seed potatoes for production and distribution.

4-3
MICROTUBER SEED POTATO

Country /Region	Years Taken in the Field									Supply Stage
	1	2	3	4	5	6	7	8	9	
Korea	G0	G1	G2	G3						
MICROTUBER	G0 / G0n	G1	Only 13 months (tissue culture » 1st, 2nd Generation)							
Canada	PE	E1	E2	E3	E4	F	C			
Europe	Clones	S	S	SE	E	A	B			
North America	N	G1	G2	G3	G4	G5				
India	B	B	B	F1	F2	C	C	C	C	
South Africa	G1	G2	G3	G4	G5	G6	G7	G8		
Australia	G1	G2	G3	G4	G5					

4-4
SEED INDUSTRY SOLUTION

· Seed potatoes are given codes for annual production potatoes by country, and they are multiplied and used up to 9 generations depending on the needs of each country.

· MICROTUBER has an edge in competitiveness as it can obtain a high yield of high-quality potatoes with rich nutritional value by supplying the lowest generation of potatoes through our Generation System. Lowest generation is key to high-quality, disease-free potatoes.

· The penetration rate of disease-free seed potatoes determines productivity per unit area.

Average penetration rate of disease-free seed potatoes		
China	Korea (4th Generation)	Europe, U.S. (5th Generation)
20%	40%	90%

Average potato production / ha			
China	Korea (4th Generation)	Europe, U.S. (5th Generation)	N. Korea
16.2t	23.2t	over 42t	12.6t

· Increasing the penetration rate of disease-free seed potatoes means that high-quality potatoes can be produced with high productivity.

The penetration rate of disease-free seed potatoes ⬆	High productivity of high-quality ⬆

4-5
PROCESS OF PRODUCING MICROTUBER SEED POTATOES

STEP 01 Tissue Culture

- Solid Medium : 100pcs/dish
- Liquid Medium : 100~120pcs/dish
- Europe, U.S. : under 20~30pcs/dish

Maximum culture technology

STEP 02 Mass Propagation of stems

- Cultured stems of 2 dishes in BIOREACTOR
- Over 1,500 internodes /month

STEP 03 Propagation of planting stems

- Planting 100 stems /seedbed
- 3,000 seedbeds /greenhouse(661m²) 300,000 stems

Mass propagation Stem cutting can be used for replanting

STEP 04 G0 seed potatoes (Minituber)

G0 Harvesting from the Stems of seedbeds
- 300,000pcs/3months
- Greenhouse (661m²)

Secure large-scale production technology

STEP 05 G0 to G1 (Minituber)

After Seeding G0 on seedbeds, G1 will be produced.

Minituber(G1) 200,000~400,000 (2 times/year)

STEP 06 Ultra-dense cultivation method (Minituber)

Seeding 20,000-100,000 G1 on the soil in a greenhouse > G2 harvested 150,000-500,000 per year (Greenhouse(666m²))

Minituber(G2) 500,000/year

4-6
MICROTUBER SEED POTATO TYPES

SUMI

SPUNTA

PURPLE POTATO

RED POTATO

CHUBAEK

SAEBONG

RUSSET BURBANK

DAESEO

5

MICROTUBER TSCM

SEED MANAGEMENT, SOWING, HARVESTING, AND DISTRIBUTION ARE VERIFIED AT A GLANCE

5-1

SUPPLY CHAIN MANAGEMENT SOLUTION TSCM (MICROTUBER SUPPLY CHAIN MANAGEMENT)

Supply chain tracking and automation

Information and data visibility

Records and certification of origin

Smart contract

Hardware + Software + Integrated Service Solutions

Automatic Recognition Solutions

· Logistics Picking Solution (DPC/DPS/DAS)
· Logistics Storage Facility Engineering
· Automatic Scanning Machine
· Automatic Labeler System

Supply Chain Execution Solutions

· Production Point Management System
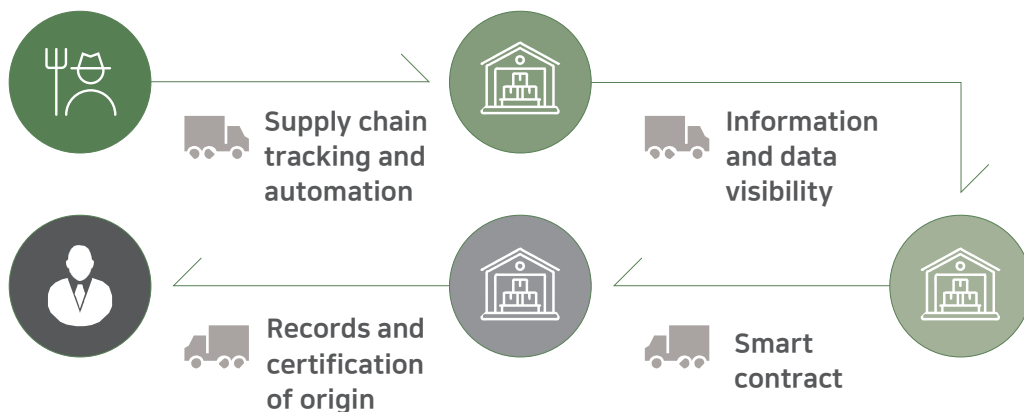· Warehouse Management System(WMS)
· Transportation Management System(TMS)
· Point of Sale Management System(POS)

Integrated Solutions

· Supply Chain Quality Management System(TQMS)
· Product history management System(CATS)
· Quality Evaluation System
· Monitoring System

Specialized Solutions

· Temperature and Humidity Management System
· Tablet Electronic Menu
· Kiosk

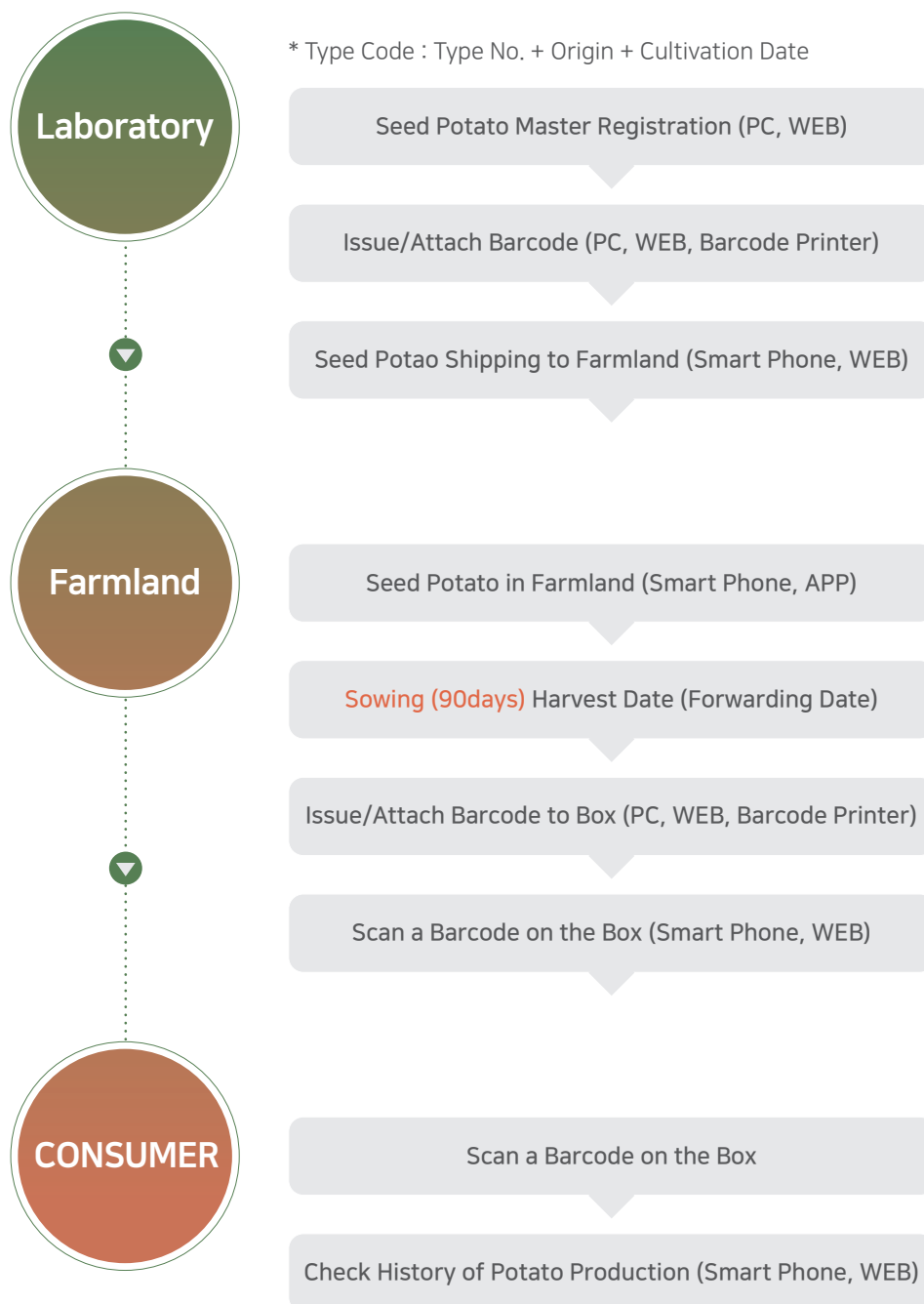| Material | Logistics | Production | Delivery | Sale |

5-2
HISTORY MANAGEMENT SW MAIN FUNCTIONS

Screen(Mid)	Screen(Small)	Programs	Development System
WEB	Laboratory	Seed Potato Master Management	WEB
		Seed Potato Barcode Management	WEB
		Seed Potato Laboratory Forwarding Management	WEB
		Seed Potato Laboratory Receiving(Return) Management	WEB
	Farmland	Seed Potato Farmland Receiving Management	WEB
		Seed Potato Laboratory Return Management	WEB
		Potato Farmland Forwarding Management	WEB
		Potato Farmland Receiving (Return) Management	WEB
		Barcode Management for Potato Packaging Boxes	WEB
		Inquiry of Potato History	WEB
I/F	Commonness	Login & Version Check	Android I/F
		Preferences	Android I/F
	Laboratory Work	Seed Potato Laboratory Forwarding Management	Android I/F
		Seed Potato Laboratory Receiving Management	Android I/F
		Seed Potato Farmland Receiving Management	Android I/F
		Seed Potato Laboratory Return Management	Android I/F
	Farmland Work	Potato Farmland Forwarding Management	Android I/F
		Potato Farmland Receiving (Return) Management	Android I/F
		Barcode Management for Potato Packaging Boxes	Android I/F
		Inquiry of Potato History	Android I/F
	Preferences	User Information	Android I/F
		Development Preferences	Android I/F
Mobile	Commonness	Login & Splash	Android
		APP UI & Preferences	Android
		Main Screen	Android
		Design Guide	Android
	Laboratory Work	Seed Potato Laboratory Forwarding Management	Android
		Seed Potato Laboratory Receiving(Return) Management	Android
		Seed Potato Farmland Receiving Management	Android
		Seed Potato Laboratory Return Management	Android
	Farmland Work	Potato Farmland Forwarding Management	Android
		Potato Farmland Receiving (Return) Management	Android
		Barcode Management for Potato Packaging Boxes	Android
		Inquiry of Potato History	Android
	Preferences	Deployment page	Android
		User Information	Android
		Development Preferences	Android

· The list of programs is subject to change.
· Smart Phone OS : Android (IOS Future release)

5-3
HISTORY MANAGEMENT PROCESS

Laboratory

* Type Code : Type No. + Origin + Cultivation Date

Seed Potato Master Registration (PC, WEB)

Issue/Attach Barcode (PC, WEB, Barcode Printer)

Seed Potao Shipping to Farmland (Smart Phone, WEB)

Farmland

Seed Potato in Farmland (Smart Phone, APP)

Sowing (90days) Harvest Date (Forwarding Date)

Issue/Attach Barcode to Box (PC, WEB, Barcode Printer)

Scan a Barcode on the Box (Smart Phone, WEB)

CONSUMER

Scan a Barcode on the Box

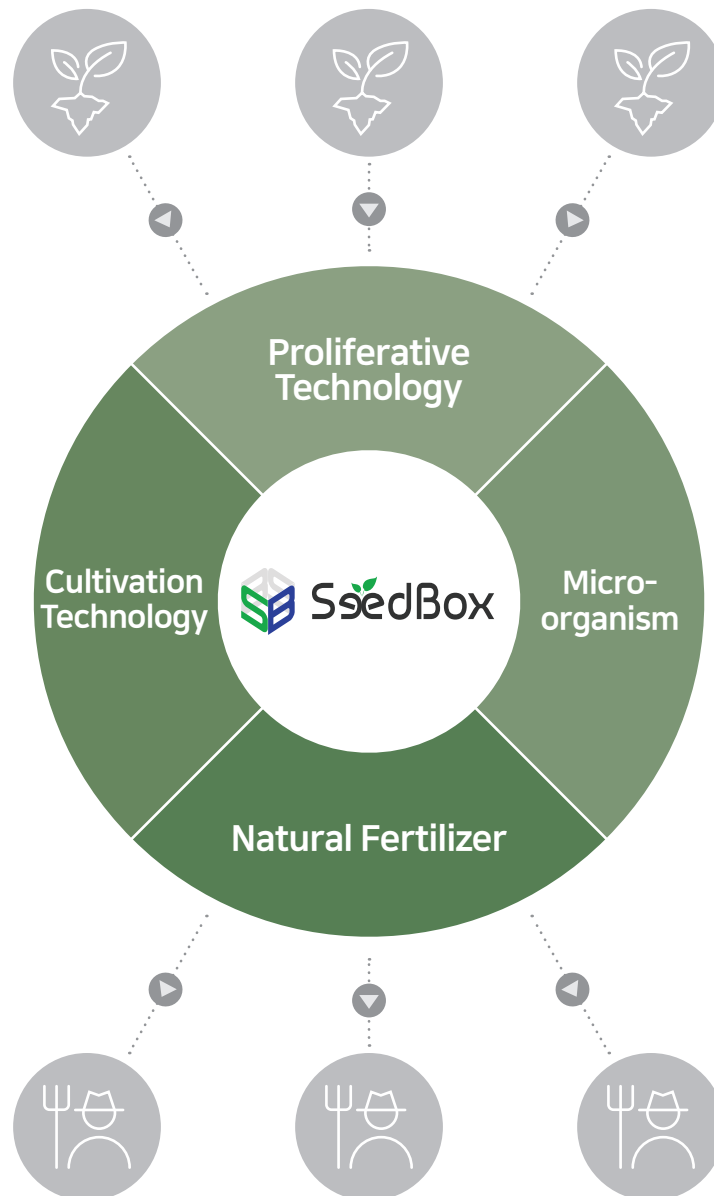Check History of Potato Production (Smart Phone, WEB)

6

MICROTUBER PLATFORM 'SEED BOX'

THE WORLD'S FIRST CROWDFUNDING PLATFORM SPECIALIZED IN AGRICULTURE

6-1
AGRICULTURAL PLATFORM 'SEED BOX'

· World's First Crowdfunding Platform for Agriculture - SEED BOX
· The world's top 10 seed companies have a market share of nearly 77%. It is a seed monopoly market dominated by a small number of companies. The top four seed companies supply more than half of the seeds that are distributed worldwide. A platform was created to create a method that is transparent and non-monopolistic in this market.

01 SEED
    INDUSTRY
02 SEED POTATO
03 MICROTUBER
    COMPANY
04 ABOUT
    MICROTUBER
05 MICROTUBER
    TSCM
**06 MICROTUBER
    PLATFORM**
07 MICROTUBER
    TOKEN

6-2
PLATFORM ECOSYSTEM

1. The platform is operated around agriculture that produces agricultural products.
2. In addition to potatoes, the laboratory constantly researches seeds.
3. Develop, find, and select good seeds through the platform.
4. Connect agricultural products and local farms.
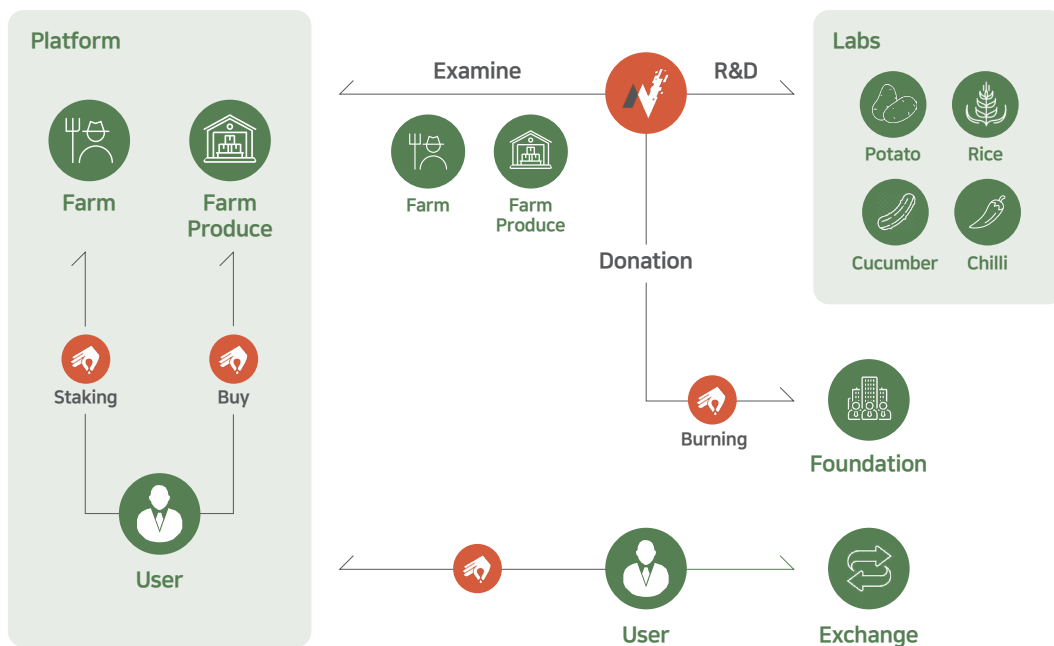
6-3
ORIENTATION OF PLATFORM
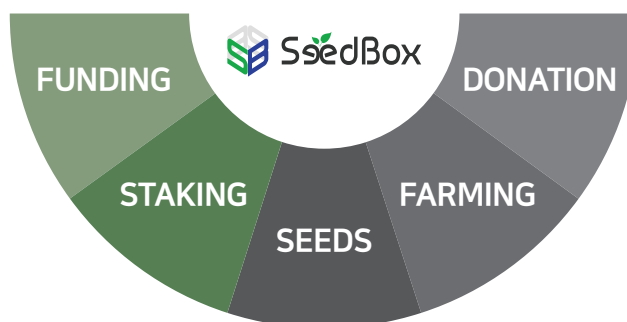
STAKING

SEED BOX, STAKING?

Keep your tokens locked for a certain period of time.
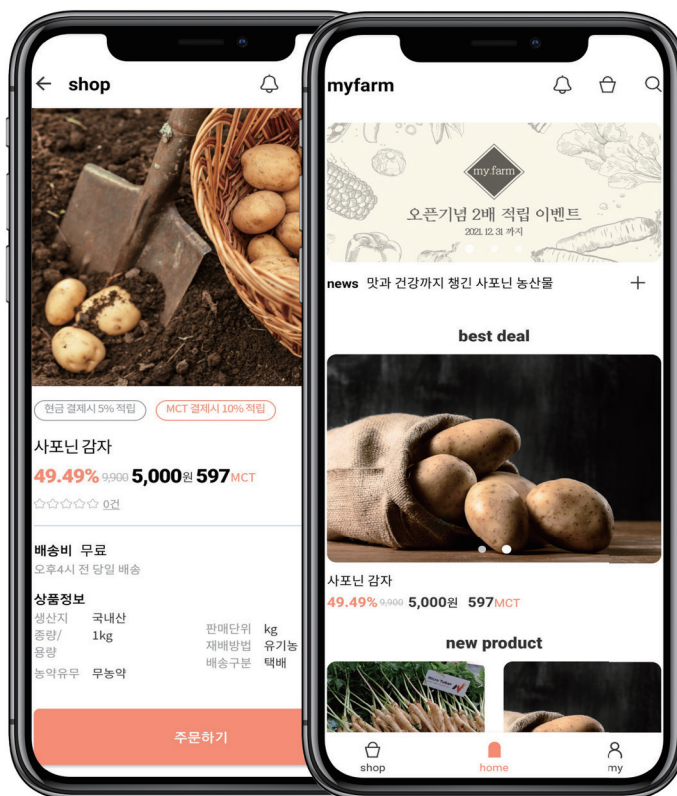You will be rewarded with tokens for that period.

FUNDING

SEED BOX, FUNDING?

You can purchase products from the completed crowdfunding campaigns on the platform.

6-4
myfarmMARKETPLACE

my.farm

[Download on the App Store]

[GET IT ON Google Play]

Layer 2 Solution

MCT Deposit / Withdrawal System
MCT Deposit/Withdrawal System Integrated.
Fast Transaction and Reduced Price Volatility During Checkout.

Agriculture Products

Seed Box Staking
Purchase Agriculture Products from Seed Box Staking Campaigns
in MCT or Cash.

MCT Reward

Coupon & Events
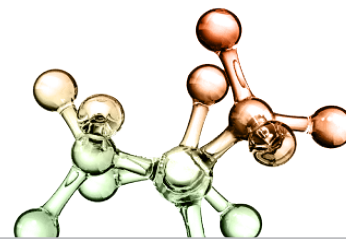Get Rewarded in MCT for Purchases.
Various Coupon & Events.
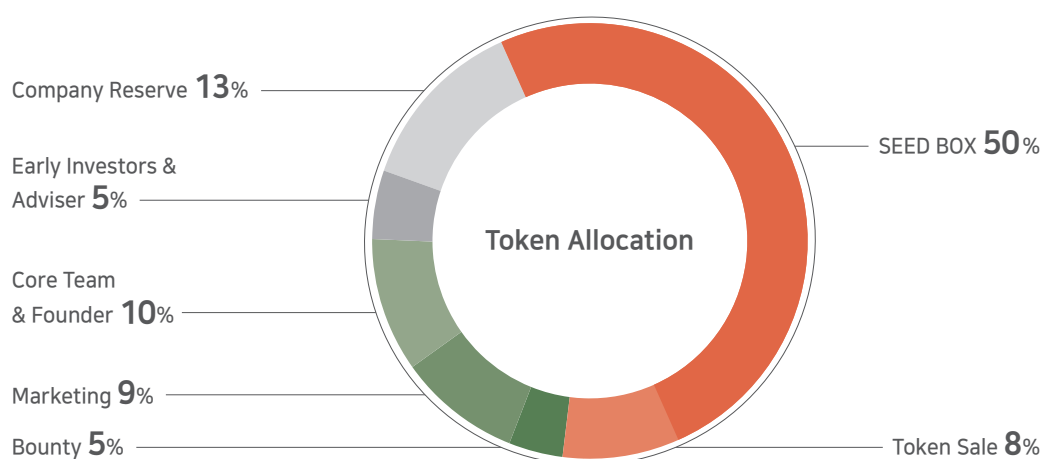
Innovative Research

Research & Transparency
Innovative Research to Maximize Product Yield and Enhance Nutrients.
Lab Results are Shown for Transparency.

7

MICROTUBER TOKEN

7-1
MCT TOKEN

· Ticker : MCT
· Coin Type : ERC-20
· Total Supply : 10,000,000,000
· Role of Token : UTILITY

7-2
TOKEN Allocation

Company Reserve **13**%

Early Investors & Adviser **5**%

Core Team & Founder **10**%

Marketing **9**%

Bounty **5**%

Token Allocation

SEED BOX **50**%

Token Sale **8**%

	Volume	Lock-up
Token Sale	800,000,000	
SEED BOX	5,000,000,000	Lock
Marketing	900,000,000	
Core Team & Founder	1,000,000,000	50% 1 Year 50% 2 Year
Early Investors & Adviser	500,000,000	50% 1 Year 50% 2 Year
Company Reserve	1,300,000,000	3 Year
Bounty	500,000,000	
TOTAL	10,000,000,000	

7-3
Use Of Token

Legal **5**%

Business Development **10**%

Operation **27**%

R&D Labs **20**%

Research **5**%

Blockchain Development **33**%

Use of Funds
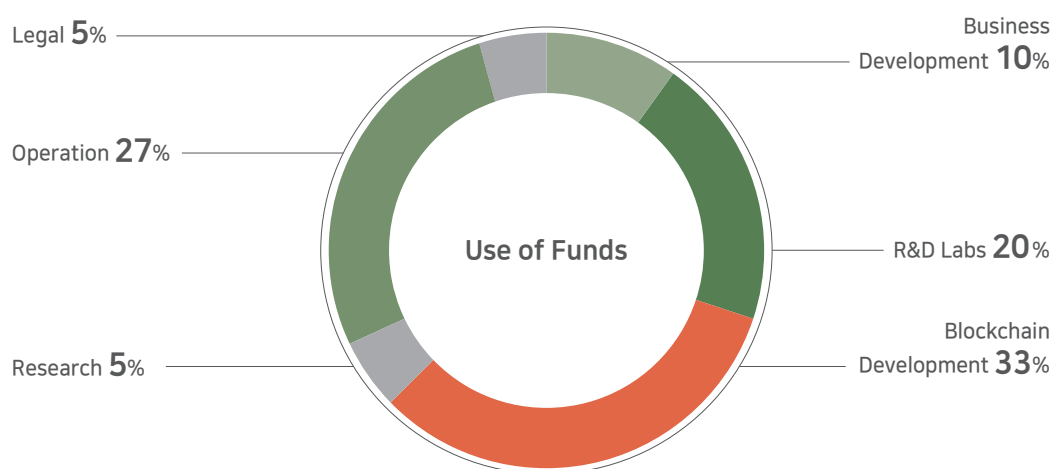
Development	Marketing	Operation	Legal
63%	5%	27%	5%

· Business Development is used for platform development and global expansion.

· R&D Labs is used for seed research and seed laboratories.

· Blockchain Development is used for platform development and overall blockchain development.

· Research is used to collect and analyze data.

· Operation is used for the overall operation and activity of MICROTUBER.

· Legal is used for expenditure on taxes and expenses, such as tax offices / law firms.

8 ROAD MAP

FUTURE PLANS & ROADMAP

2022

METAVERSE RELEASE 0.1
MetaRising ECOSYSTEM BEGINS

NFT Minting page
Seed NFTs
MCT Vesting Smart Contract
SeedBox Platform 4.0 Upgrade
MetaRising Website Launch
Pet NFTs

2023. Q1

SEEDBOX VERSION 4.0
MetaRising INTEGRATION

Cross Promotion and Partnerships
NFT Marketplace Launch
NFT Staking
NFT Airdrop
Vehicle NFTs

2023. Q2

METAVERSE RELEASE 0.2
ALPHA

Closed Alpha Test
1ST Climate Change Summit in 'MetaRising'
NFT Sale – PFP, Farming Tool
NFT Mystery Box
Avatar Customization
C2E Zone - Farming (crop)
C2E Zone - Farming (animal)

2023. Q3

METAVERSE RELEASE 0.3
BETA

Beta Test
Multiverse NFT Integration – 'WonderKing'
NFT Sale – Land
C2E DApp – Carbon Finance
User Generated Content World
C2E Zone - Ocean (Fishing)
C2E Zone - Cave (Mining)
Guild System
Dual DAO Governance

9 LEGAL CONSIDERATION

This whitepaper is about MICROTUBER as a statement of legal consideration. If you wish to purchase, use, trade, or retain the encryption token used in MICROTUBER, you must read and understand this manual carefully.

This white paper was prepared by MICROTUBER Ltd. to provide reference material on MICROTUBER for those who wish to invest in MICROTUBER.

This white paper is about MICROTUBER technology and is not a guarantee for business. We do not guarantee the complete accuracy of any content related to the white paper, and we are not responsible for it in the law.

MICROTUBER Ltd.는
(1) Actual business progress may vary.
(2) There is a possibility of mistranslation or omission in the translation process of the white paper.
(3) ICO participants do not have dividends or voting rights.
(4) ICO participants cannot request cancellation or refund for purchased microtubes.

Therefore, if you refer to or use this white paper in your own decision-making, the result is entirely at the decision of the decision-maker, regardless of profit or loss. In other words, please note that even if damages, losses, debts, or other damages occur by using this white paper, MICROTUBER LTD. does not bear any compensation or other responsibilities for them.

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