



AI POWERED COLLECTION BOT & TRACKING SYSTEM FOR THE CIRCULAR ECONOMY



SDGs Youth Summer Camp

Reduce, Collect, Trace



1 Overview of Oyster able

Trace and collection solution for plastic waste



- Package Tracking with Digital Product Passport
- Boost consumer recycling with rewards
- ESG data metrics
- Brand marketing opportunities

Pilot \$100K USD	Save up to ~ 60% cost
910 Collection bots in Korea	Founding year May 2019

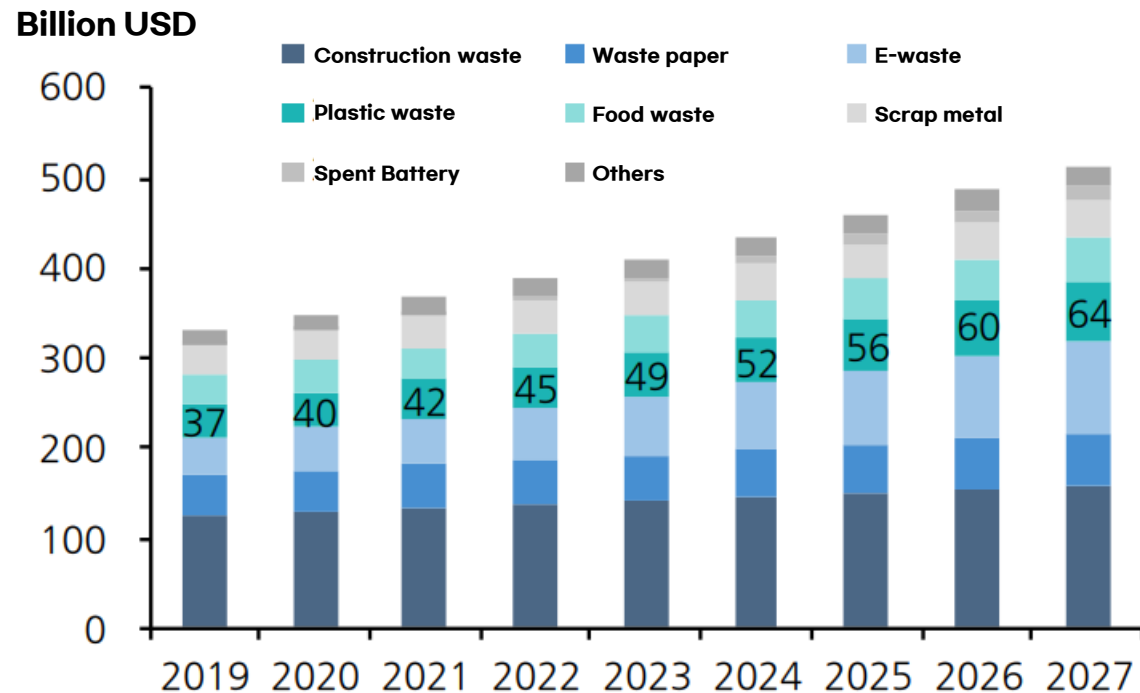
Main Partners



② Where/Why: Problem in the Global recycling Industry

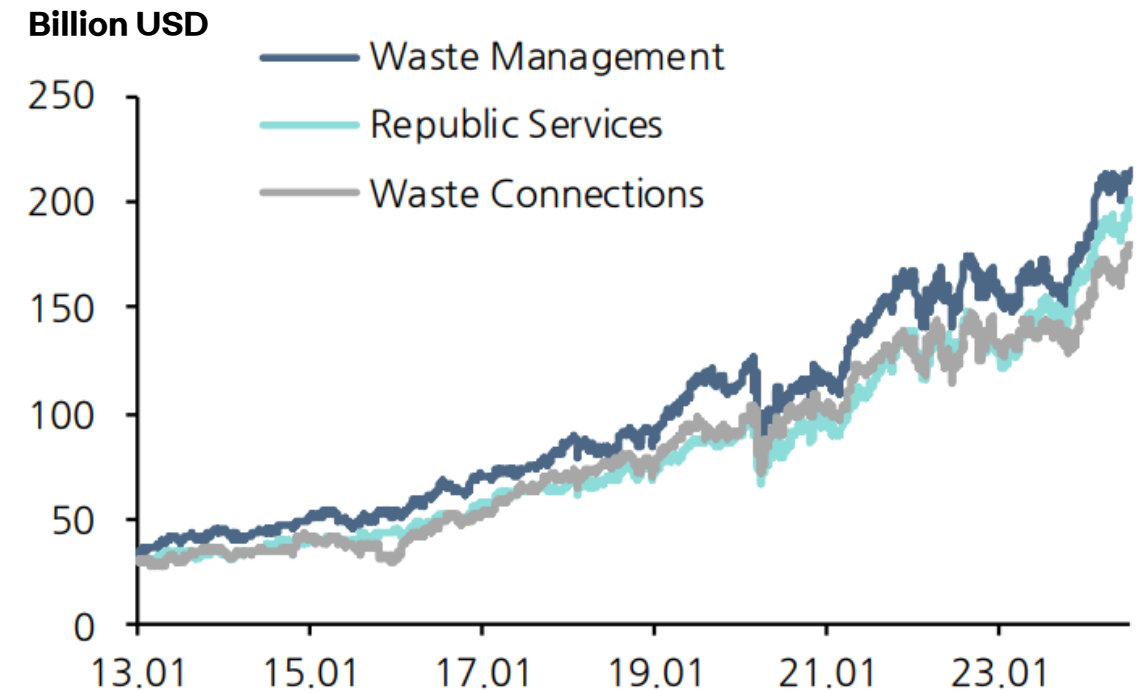
The waste management industry is undergoing a significant shift towards upstream processes due to tightening regulations on landfill and incineration. As raw material costs escalate and supply chain disruptions persist, corporate demand for recycling solutions to recover value from waste plastics is surging. Leading waste management companies are enhancing their corporate value by restructuring their operations to focus on the early stages of the recycling value chain.

Global recycling market outlook



Source: PWC

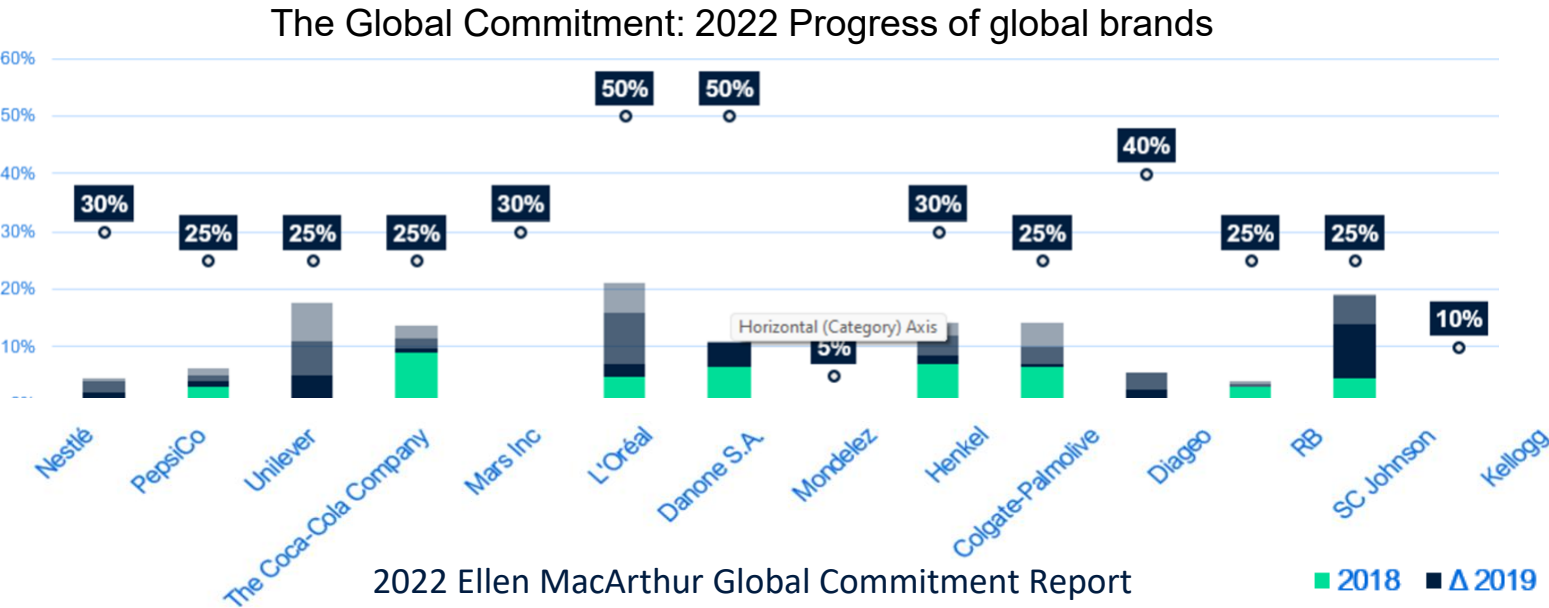
Global recycling market outlook



Source: PWC

② Where/Why: Problem in the Global recycling Industry

Global market has Big gap between supply and demand goals. Only 23% of global brands and retailers on track to achieve their targets. To achieve this goal, DRS is the best option, but high CAPEX and OPEX



② Where/Why: Problem in the Global recycling Industry

The increasing demand for recycled materials and subsequent price hikes have created a market for fraudulent recycled products.

Cheap virgin plastic is being sold as recycled plastic—it's time for better recycling certification

Driven by the Covid-induced oil price plunge, factories in China are mixing cheaper virgin plastic with recycled plastic and selling it as 100 per cent post-consumer content. Brands with sustainability commitments need to be sure they're buying genuinely recycled material. But how?



2 Where/Why: Problem in the Global recycling Industry

No tracking solution for PCR, no data for brand and product-based collection and recycling data.

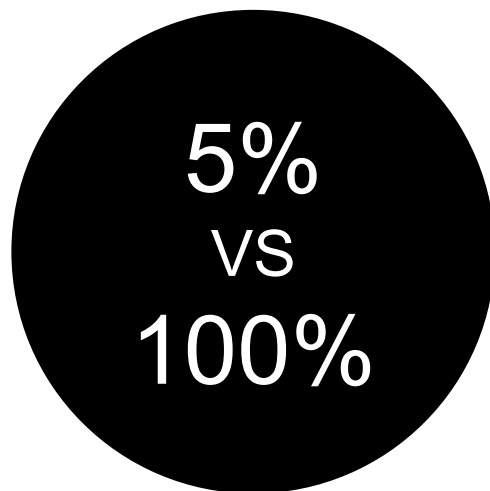
Digital Product Passport 2.0



③ Why: Problem Analysis

Brands & Organizations need a join action with consumers. Current RVM solution for DRS is too expensive, no data traction for brands and inconvenient experience for consumers. It makes lack of participations and scale up.

Problem



- Low Recycling
- High demand of PCR
- Lack of DRS
- Lack of brand collection data

Need



- Solution to close the Gap
- Reasonable
 - Scalable
 - Data Tracking

Solution

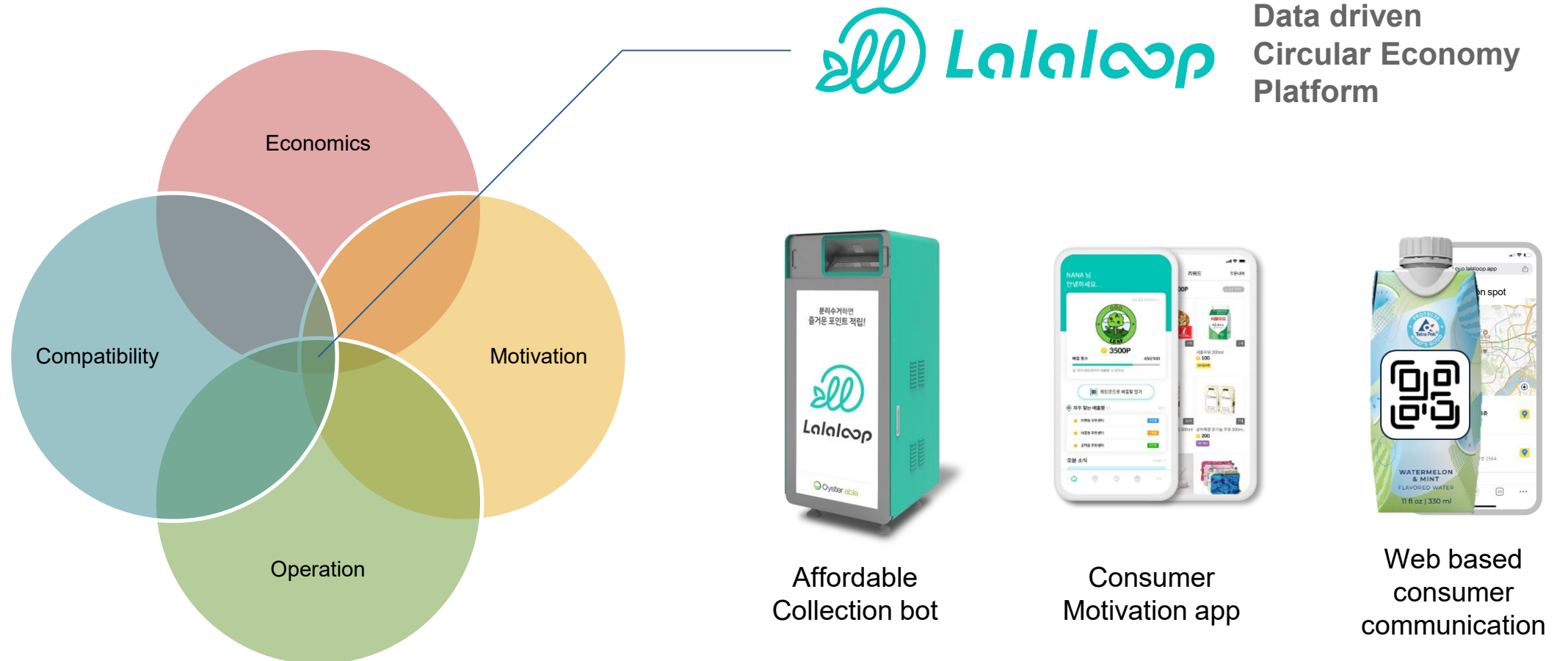


- Trackable & Scalable
Collecting Solution

4 Introduction – New Era of collection

Sweet spot for the recycling collection

Scalable collection bot with consumer motivation app/web can build strong collection chain for PCR providing data and marketing opportunities



4 Solution

Packaging Track by motivating Consumers & Brands

- Recognise, collect and track with the digital product passport
- Rewards and gamification for consumer motivation
- Marketing opportunities for brands

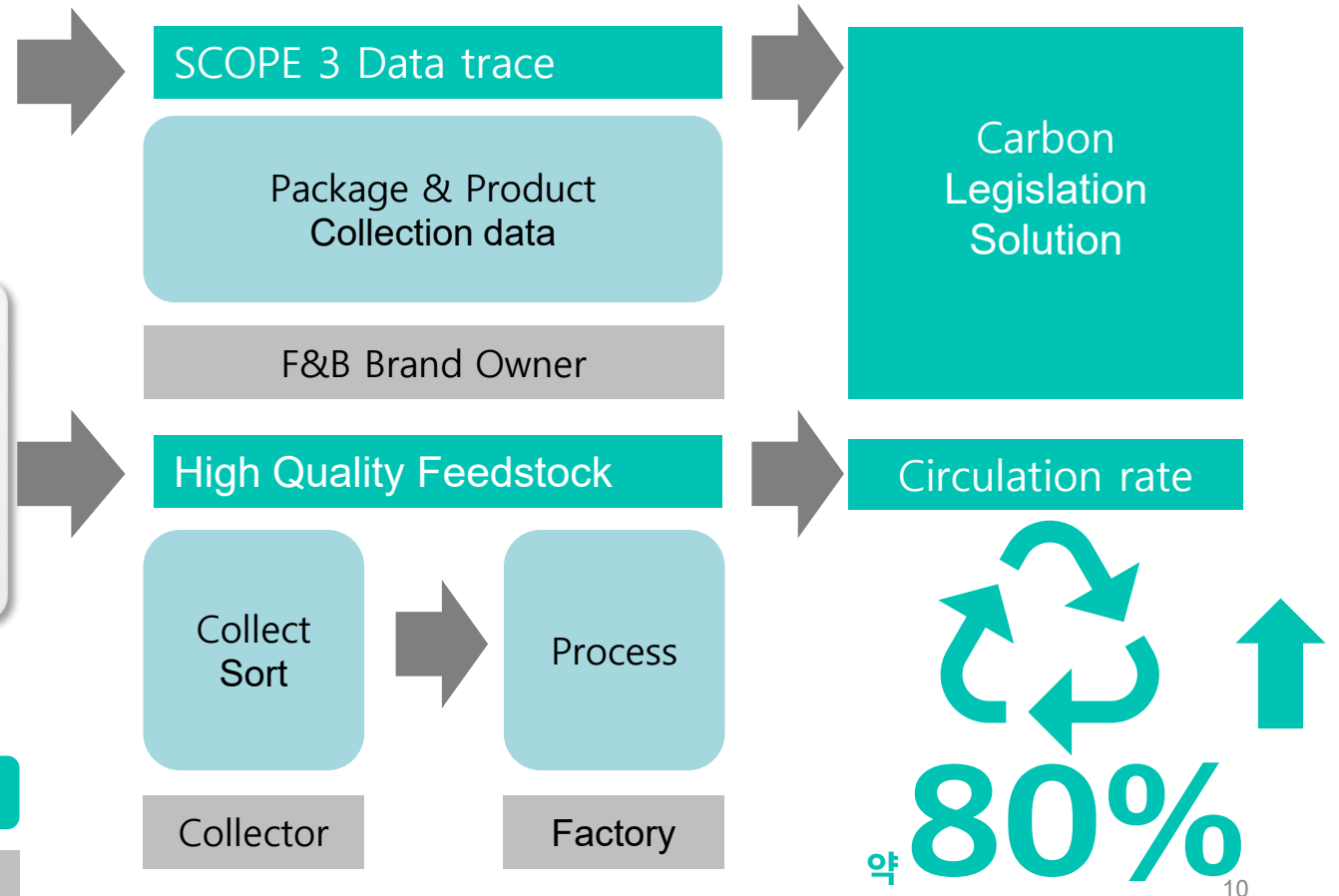


Trackable ID

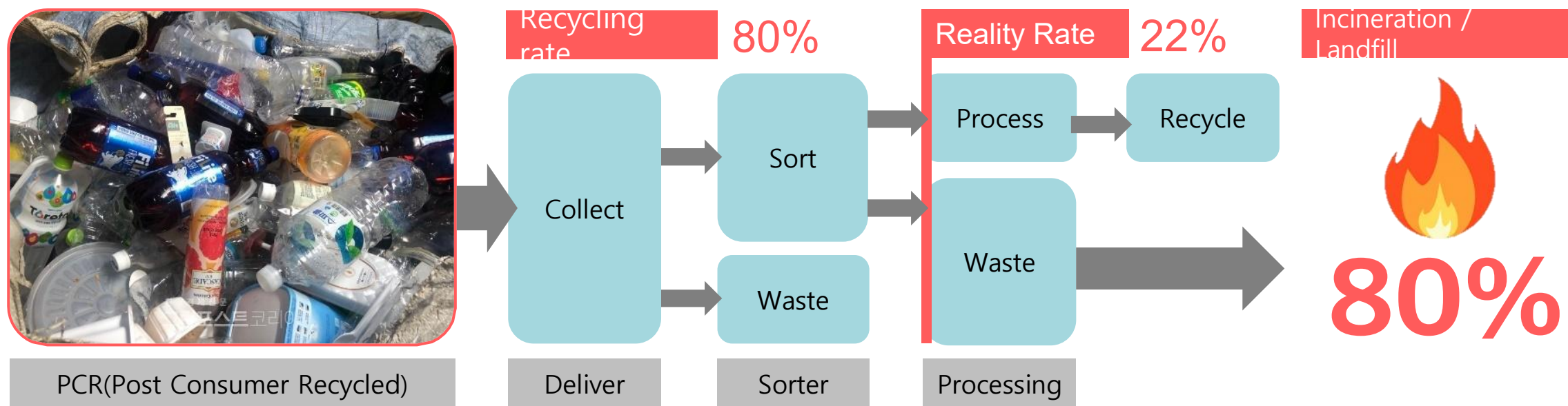
Collection Bot

Reward App

PCR(Post Consumer Recycled)



Unsorted disposals by users makes recycling unviable



*2017 [GreenPeace]





How can we solve this?

- Restraint ...
- Campaign ...
- Reward – ?



A wooden stamp with a teardrop-shaped handle and a silver-colored metal pin is positioned on a wooden base. The base is a rectangular block of light-colored wood with the word "REGULATIONS" printed in a bold, black, serif font. The stamp is placed on a white sheet of paper with faint green grid lines. In the background, there is a large stack of papers or folders, some with blue and yellow tabs. To the right, a red L-shaped desk organizer is visible. In the foreground, a blue ballpoint pen lies horizontally. The lighting is bright, casting soft shadows.

REGULATIONS

Many campaigns but Low participants..

YES PLEASE!
JUST THESE
— in —
YOUR RECYCLING BIN

All Items to be CLEAN EMPTY & LOOSE

VOICEIRELAND.ORG/RAP

#BINSORTED

With support from

voice **RECYCLING AMBASSADOR PROGRAMME**

REPAK **southern waste region** **connacht-ulster waste region** **eastern-midlands waste region**

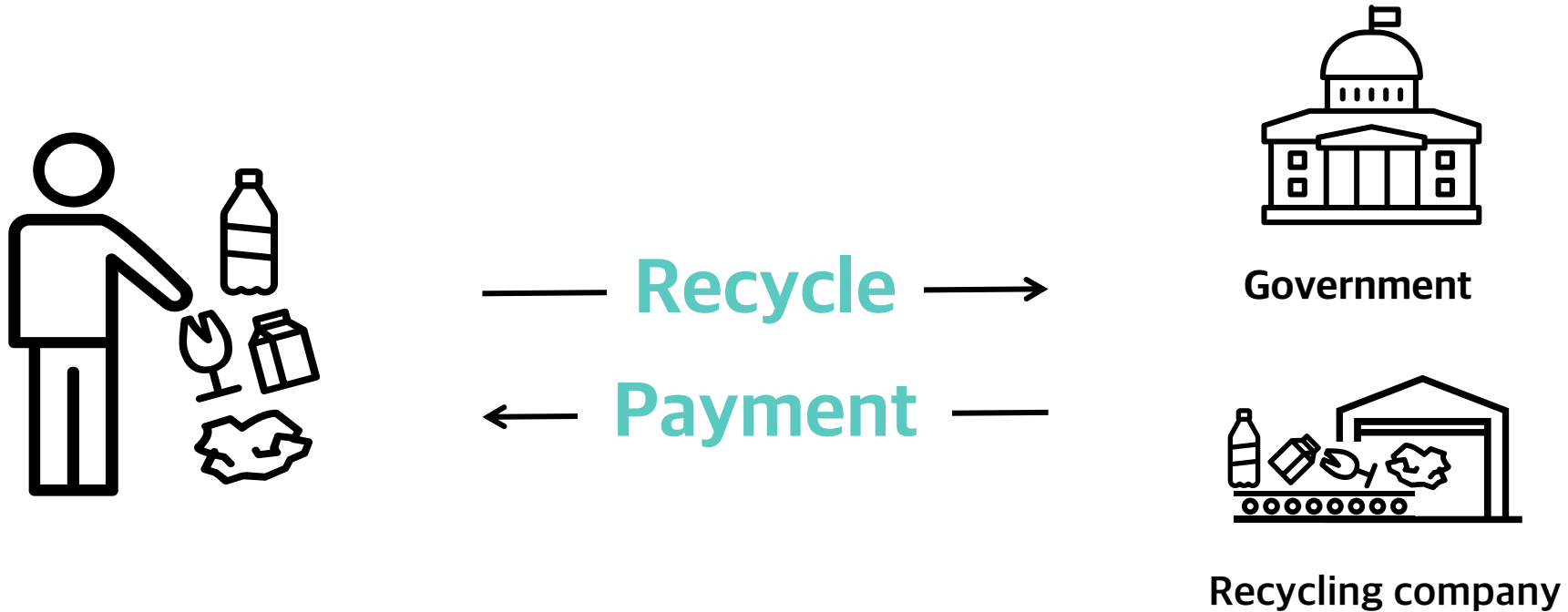
DON'T BE TRASHY
CLEAN UP YOUR ACT &
RECYCLE

GEORGE MASON UNIVERSITY **Department of Recycling and Waste Management**

Rewards?

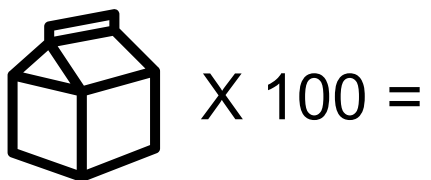


○ Existed Recycle rewards system

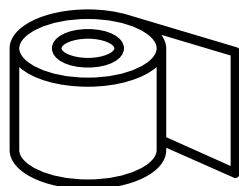




Low value, Low rewards



X 100 =



20¢

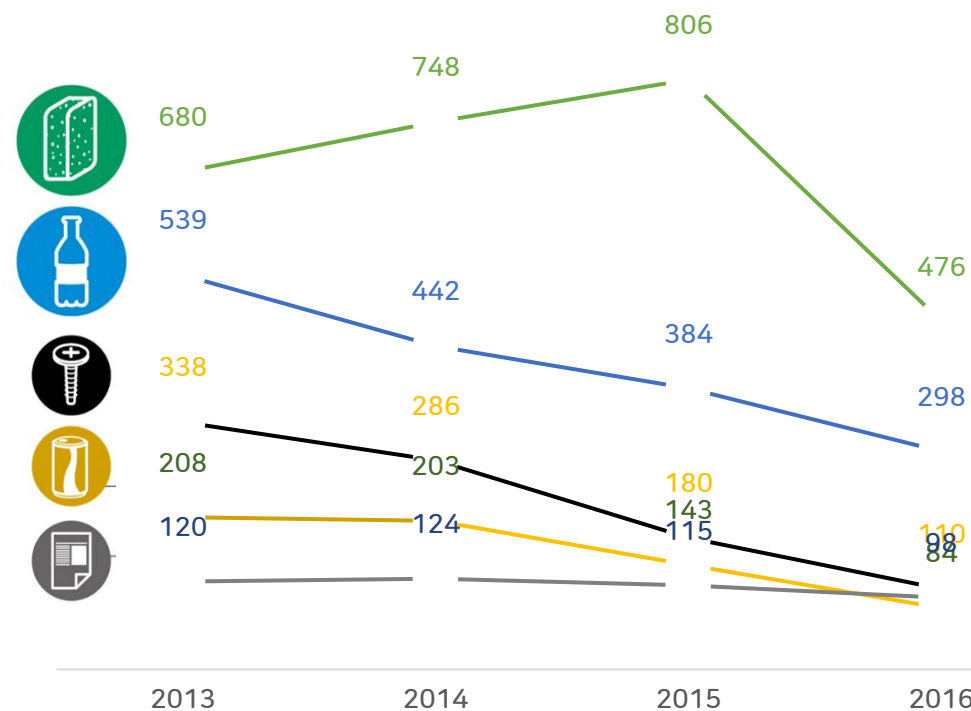


X 10 =



5¢

RECYCLED MATERIAL PRICE(KRW/KG, JAN. 19')



Rewards: 0.1USD total.



Eyes with data...



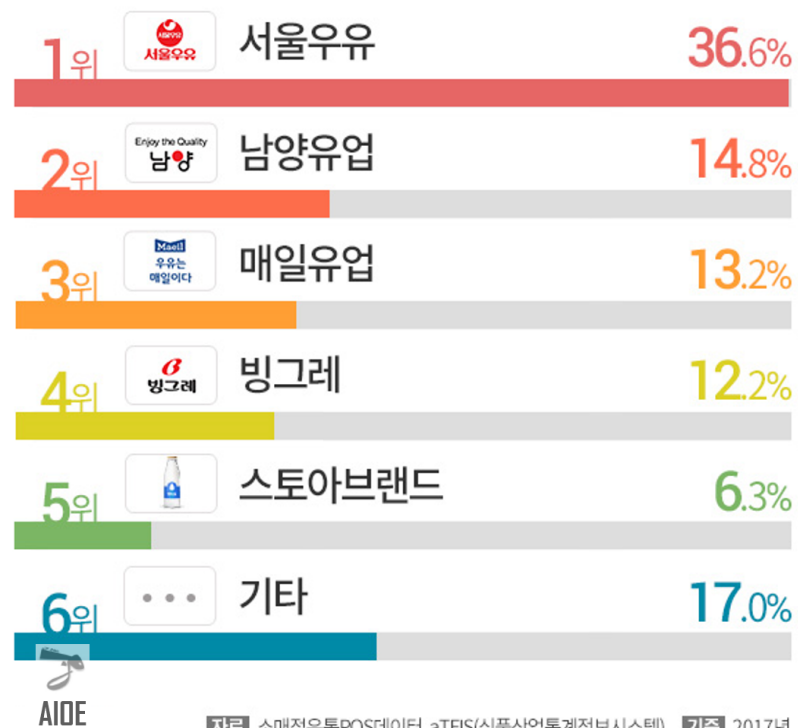
Starbucks Coffee G

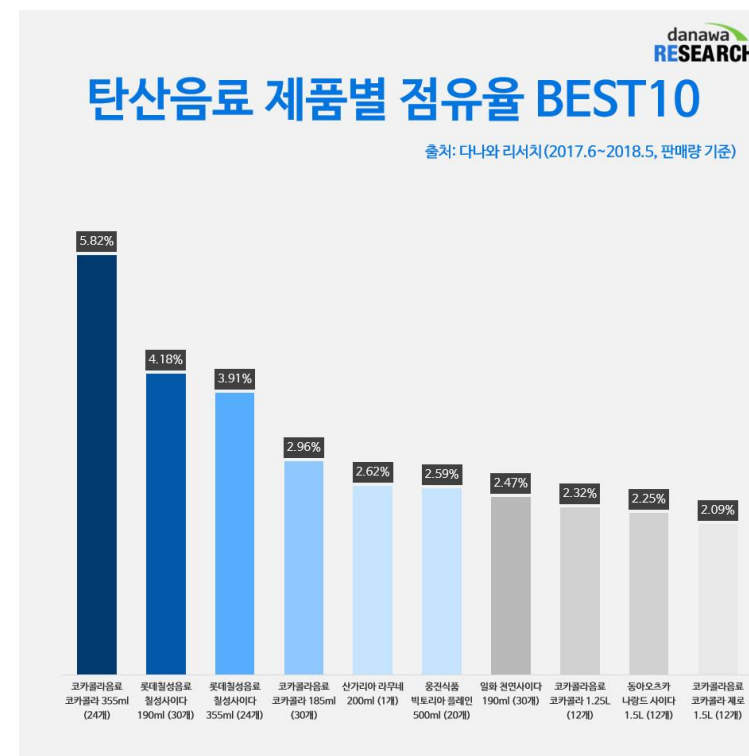
Daily Veg 500ml

Vitamin 500, 300ml

BACCHUS 280ml

423, Teheran-ro, Gangnam-gu, Seoul, 8PM





< 참고사항 >

· 당첨자 발표 후 인스타그램 DM드립니다.

· 5일이내로 당첨이 없을시 당첨취소 되느점 양해 부탁드립니다.

분리배출, 스마트해지다!

스마트 IoT 종이팩 배출함

순위	제품 (제조사)	용량	카테고리	수량	비율
1	 제주삼다수 (광동)	500ml	생수	7,038	11.8%
2	 아이시스8.0 (롯데)	500ml	생수	6,150	10.3%
3	 백산수 (농심)	500ml	생수	4,129	6.9%
4	 칠성사이다 (롯데)	600ml	사이다	4,075	6.8%
5	 칸타타 콘트라베이스 (롯데)	500ml	커피	3,722	6.3%
6	 옥수수 수염차 (광동)	500ml	다류	3,178	5.3%
7	 코카콜라 (코카)	500ml	콜라	2,647	4.4%
8	 제주삼다수 (광동)	2.0L	생수	1,191	2.0%
9	 지리산맑은샘물 (팔도)	500ml	생수	699	1.2%
10	 토레타 (코카)	500ml	이온음료	595	1.0%



Today_recycle

Follow

...



Today_recycle

We made this data from the trash!

#Todayrecycle

#COVID19 #Waste



Jeff Bezos

This is pretty cool!

#Amazon

#Bezosearthfund



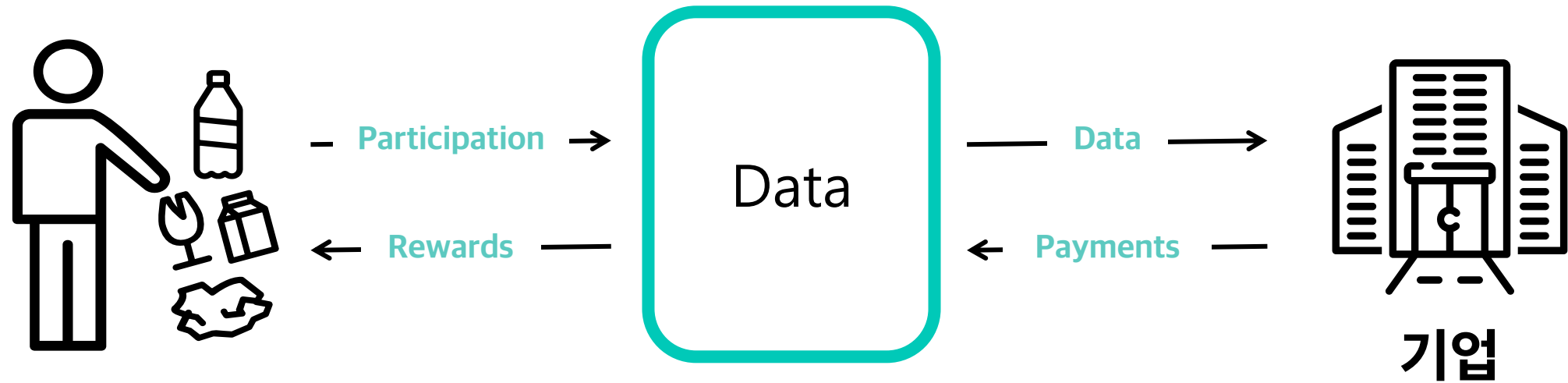
89,648 likes

5일 전

댓글 달기...

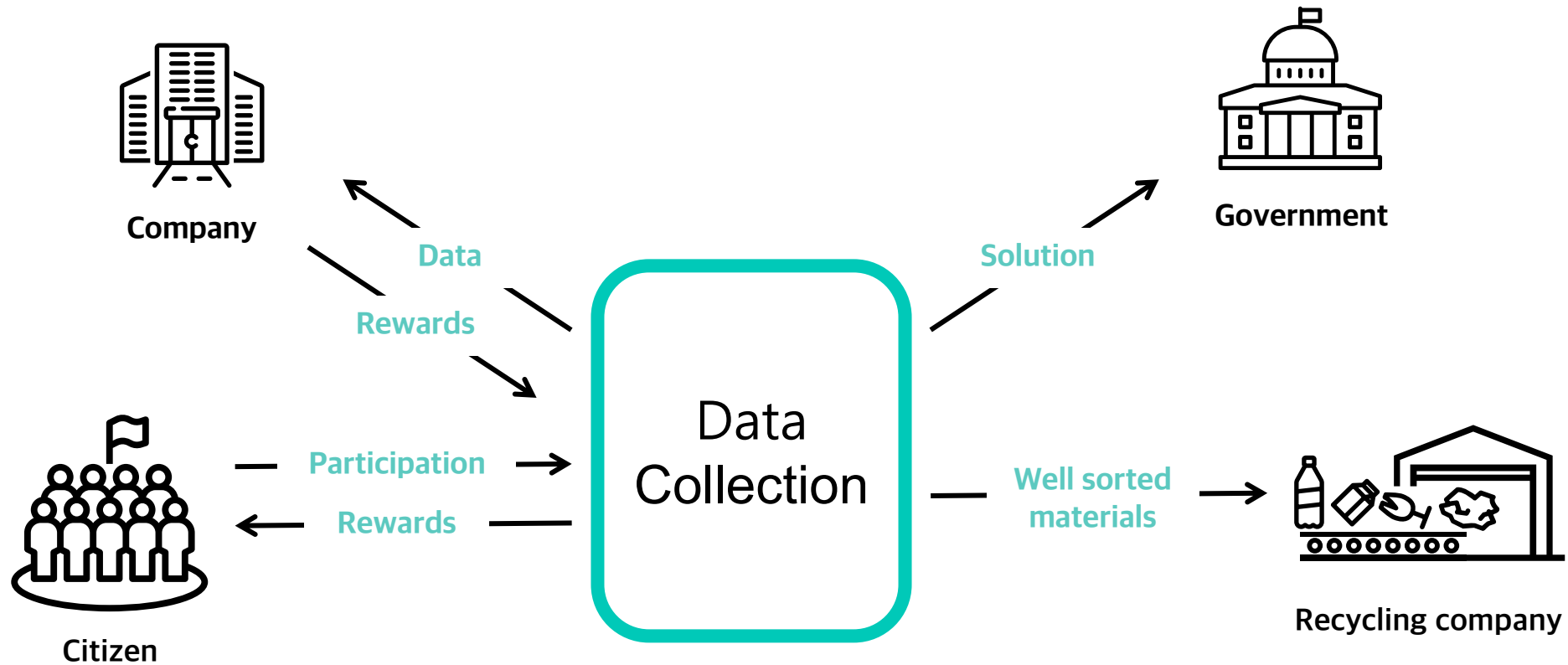
게시

○ New rewards system!

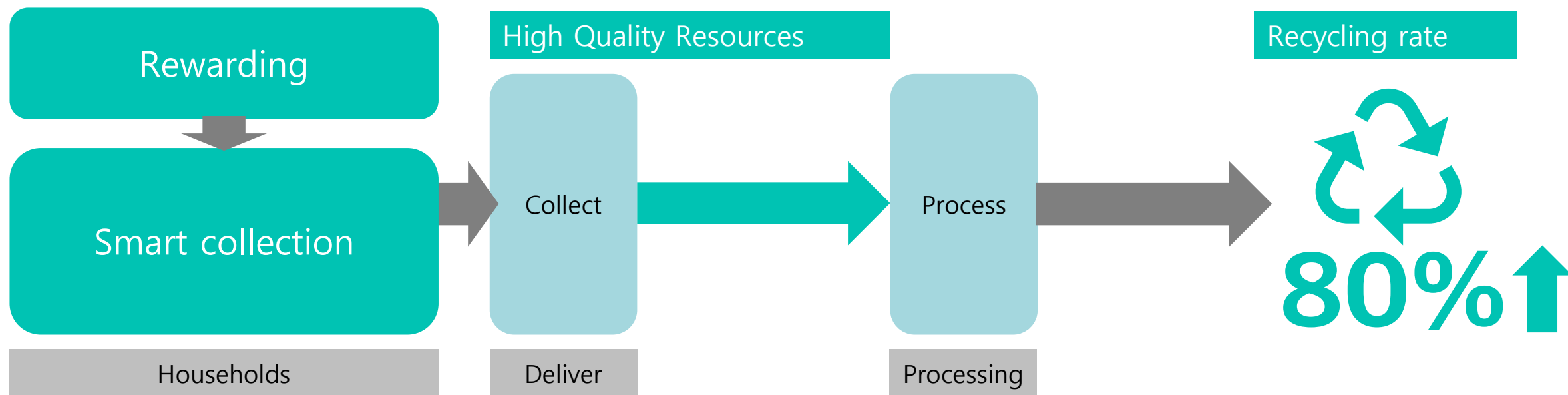




New recycling value chain with Companies



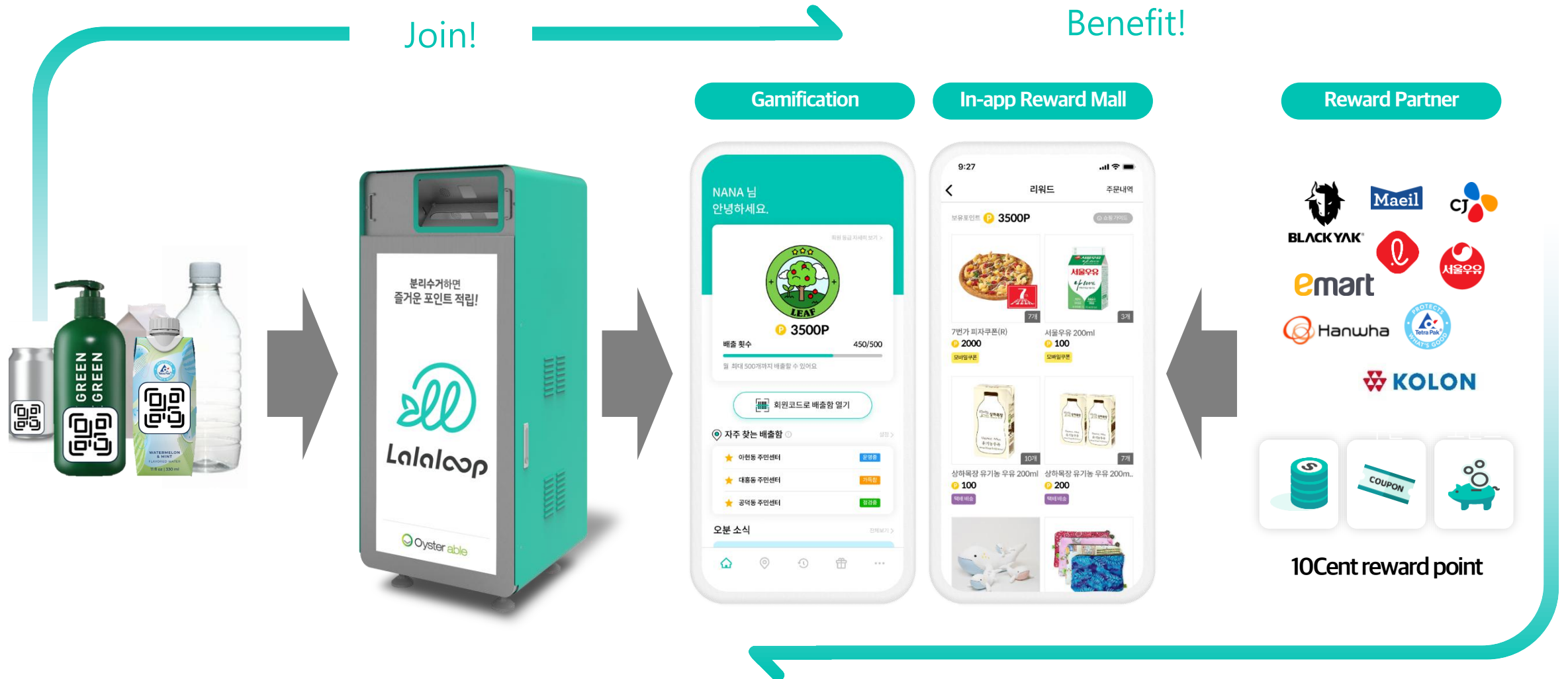
Smart infrastructure and rewarding can lead to clean separated disposals



*2016 [KORA]

4 Solution: How it works

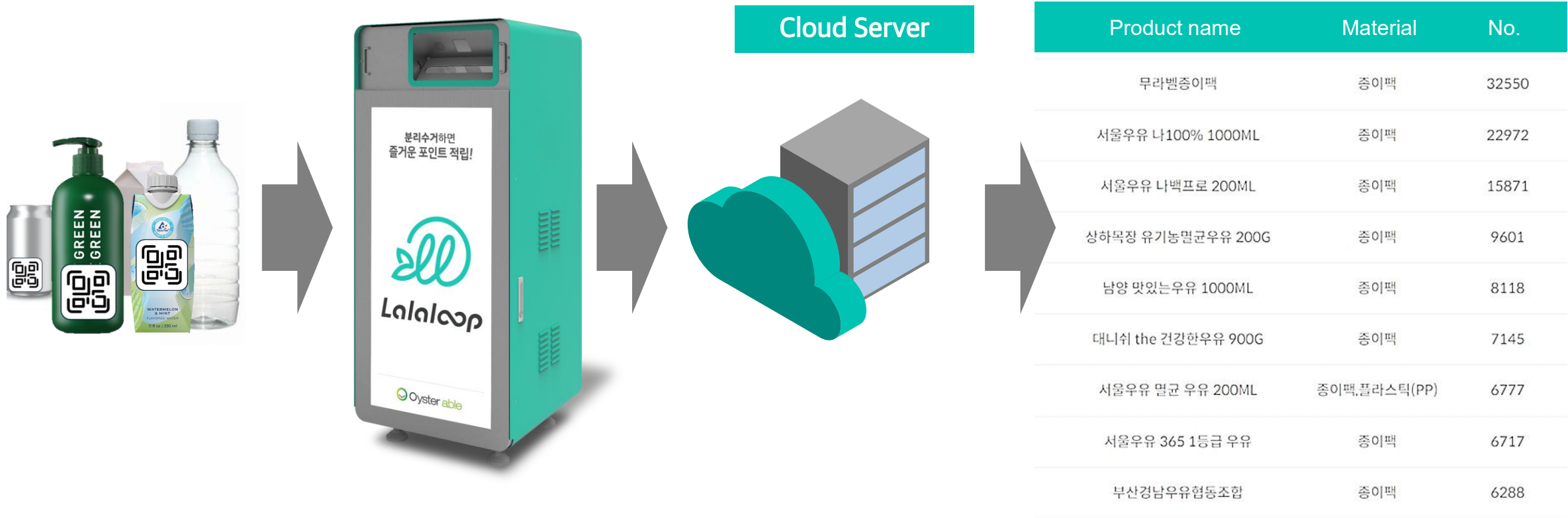
Reward app for participation promoting



4 Solution: How it works

ID based products collection data

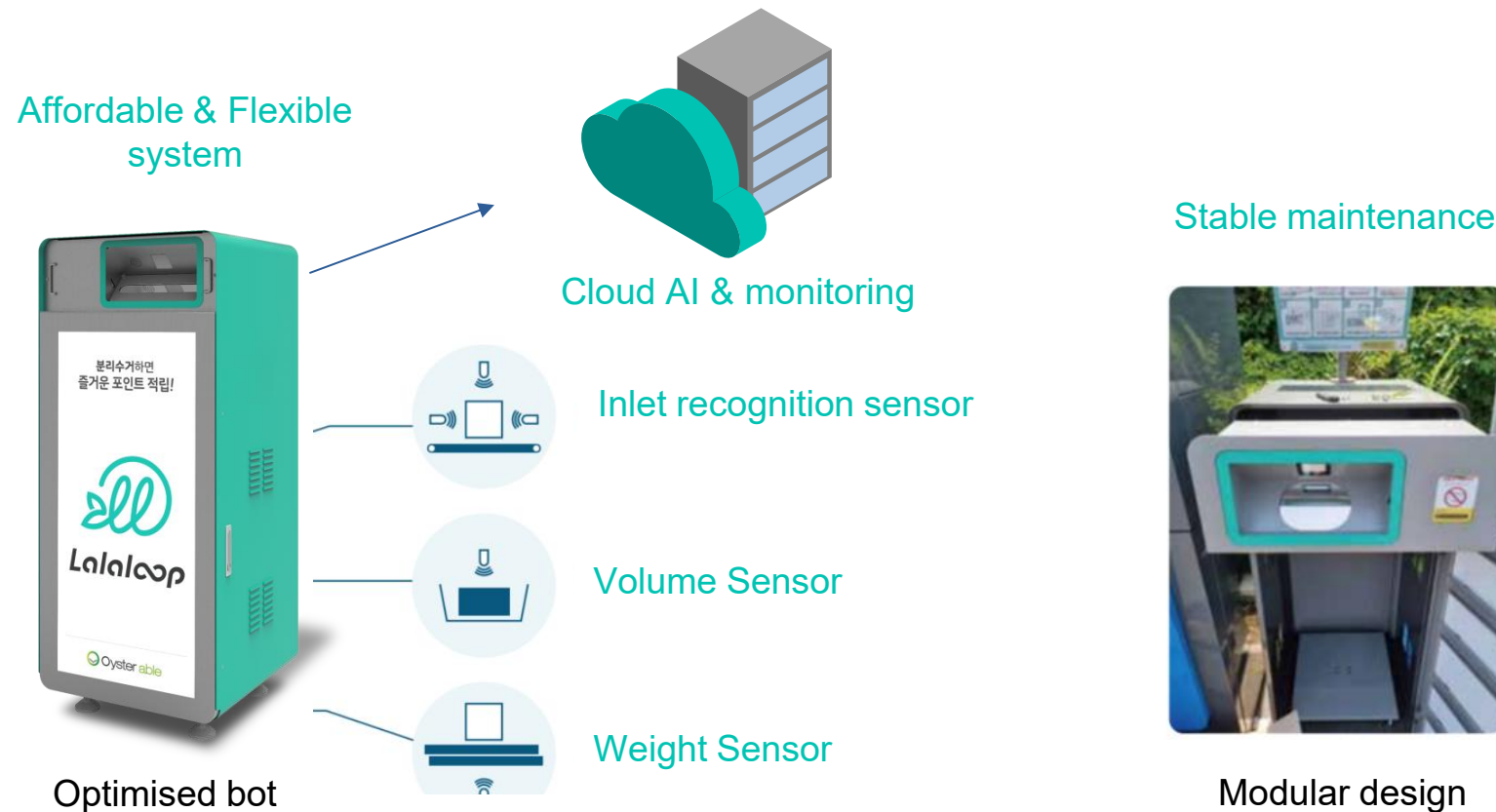
By linking the ID tracking management solution and GS1 system, it is possible to track and manage the amount of collection for each food and beverage brand product.



5 Product – Lalaloop collection bot

Cloud based AI powered solution with reasonable and scalable prices and stable operation

Optimised Bot with cloud-based AI and bot management, Reasonable CAPEX, Stable operation by modular design as a key point of infrastructure

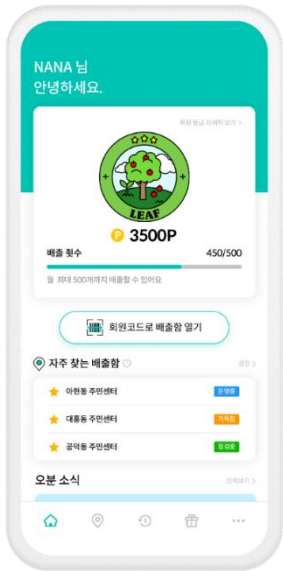


Holistic Automated Recycling Solution with Rewards

The logo for Lalaloop® Recycle is displayed in a bold, teal, sans-serif font. The text is slanted upwards from left to right. It is enclosed within a white rectangular border that is also slanted to match the text's angle. The entire logo is set against a light gray background.

Lalaloop® Recycle

Holistic Automated Recycling Solution with Rewards

	Collection bot	Reward App
Design		
Spec	- Power : AC220VM 50(60)Hz - Network : LAN, WIFI, LTE - L : 650 W : 660 H : 1450(mm) - Capacity: 500EA for PET bottle	Android, iOS Support

5 Product – Lalaloop collection bot

Collaboration with Various Corporates and Publics



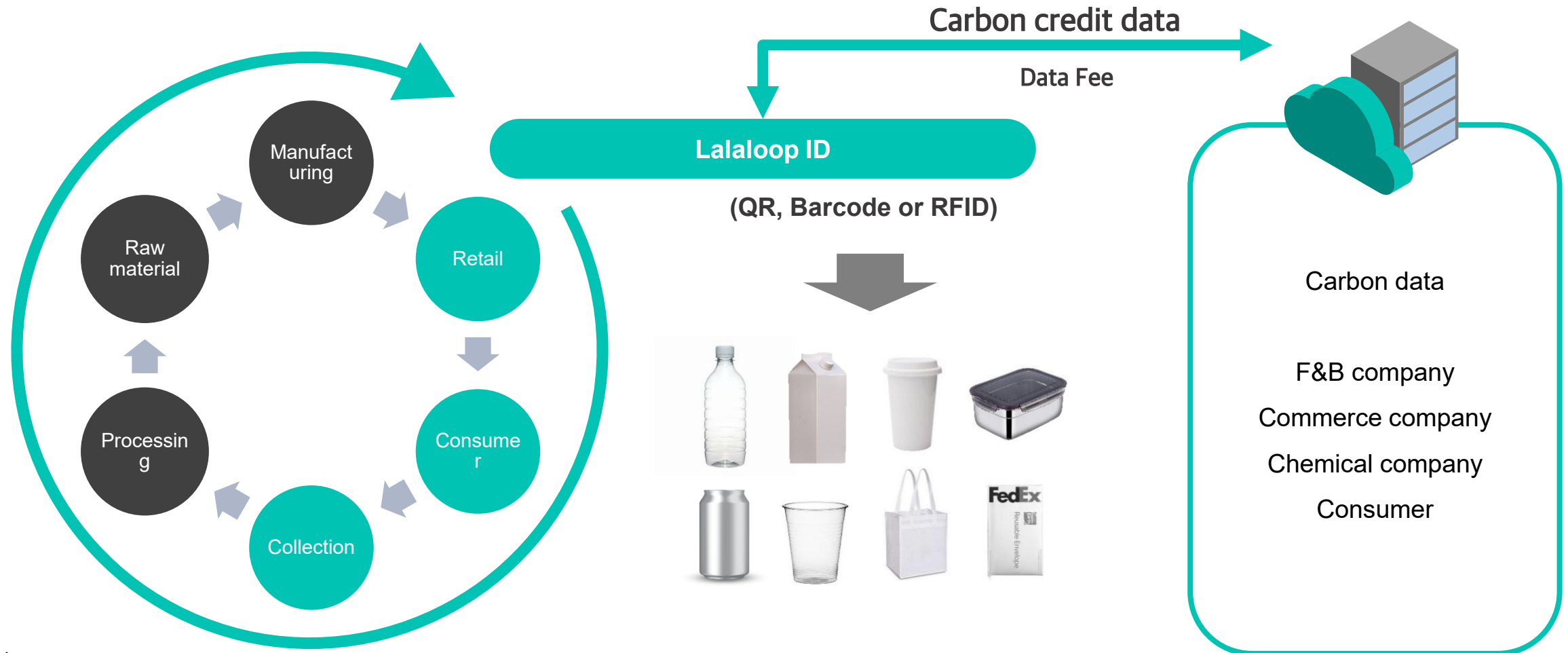
5 Product – Lalaloop collection Station

Station based system for better user experience



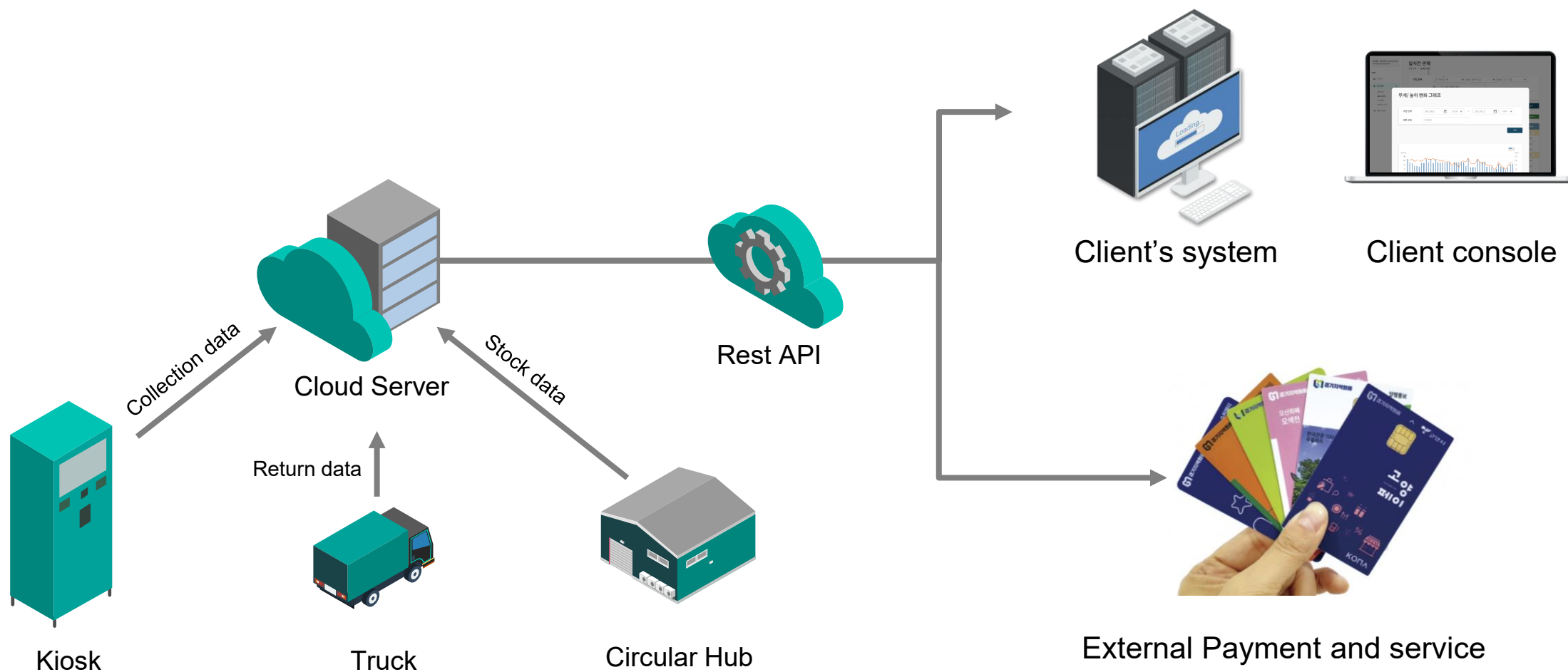
5 Product - Lalaloop ID

Lalaoop ID – Package LCA tracking solution for carbon neutral data

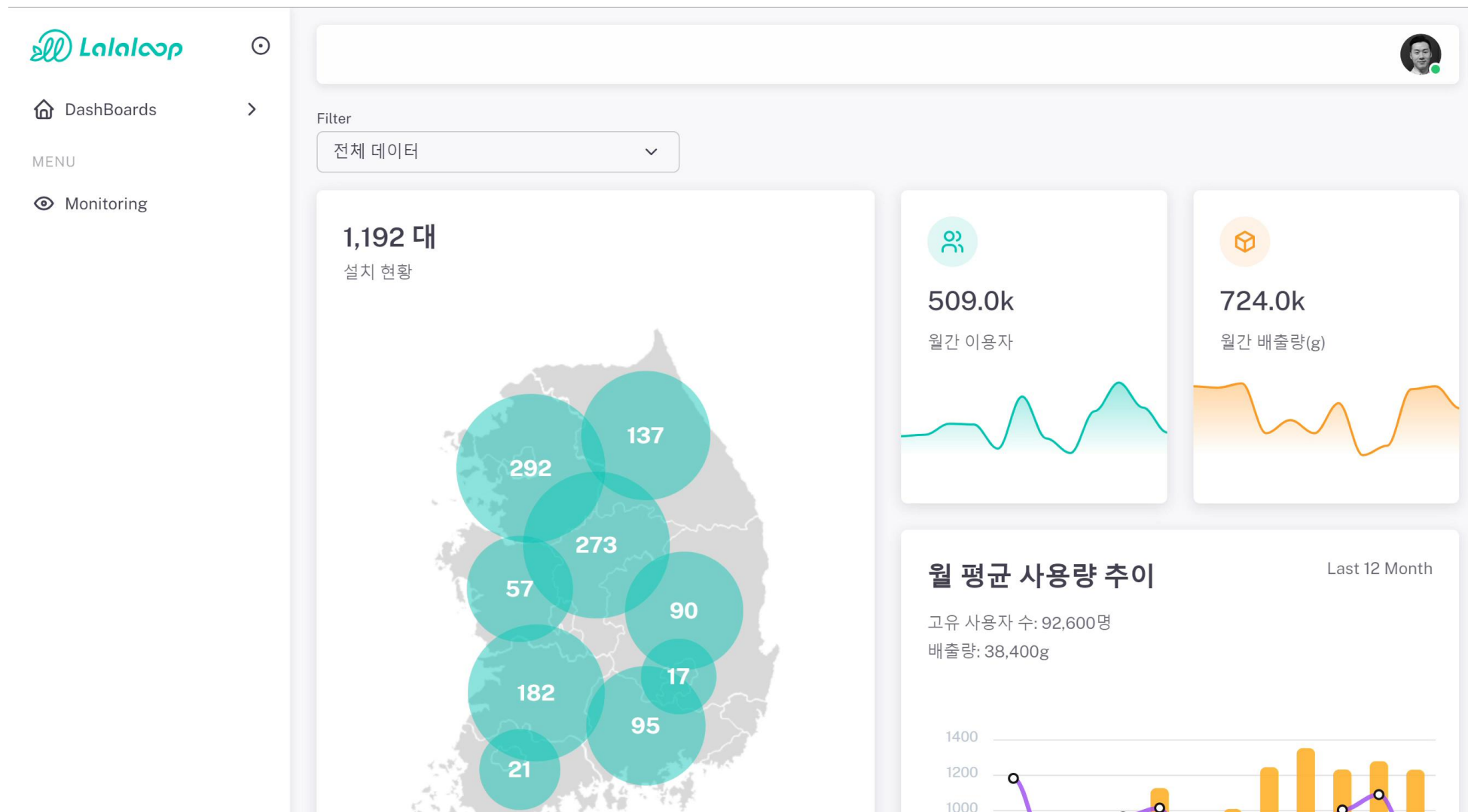


5 Product - Cloud system

Smart management with rest API and cloud system



Smart management with rest API and cloud system



LalaLoop Cup, the most easily introduced reusable cup



1

Immediate application in anywhere

2

The easiest Single-use waste reduction

3

Carbon Reduction report available

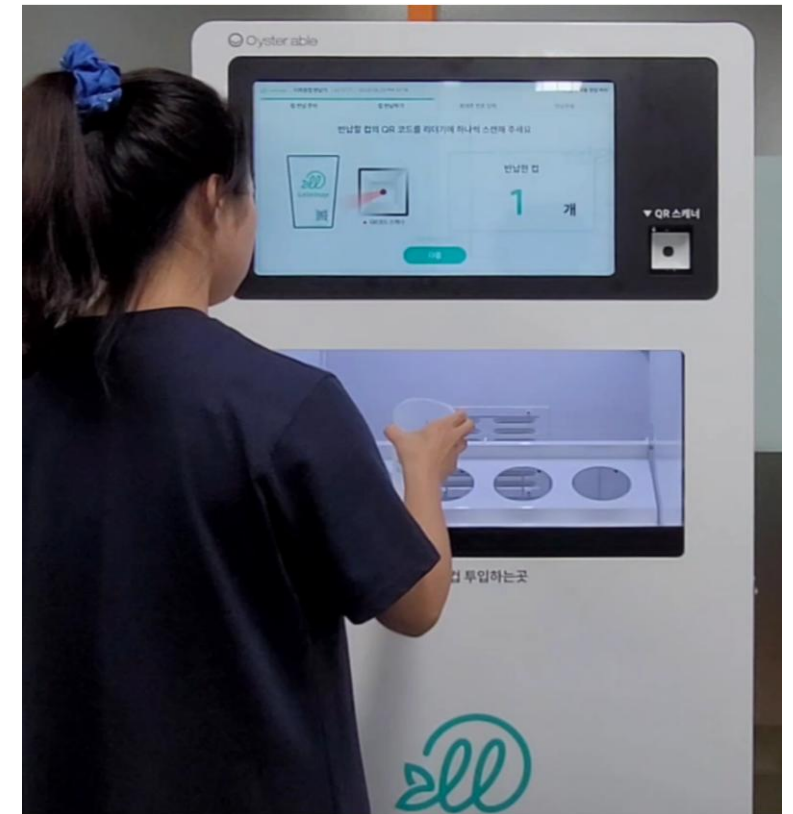
5 Product - Lalaloop Reusable Cup system

Faster and Easier Reusable Solution

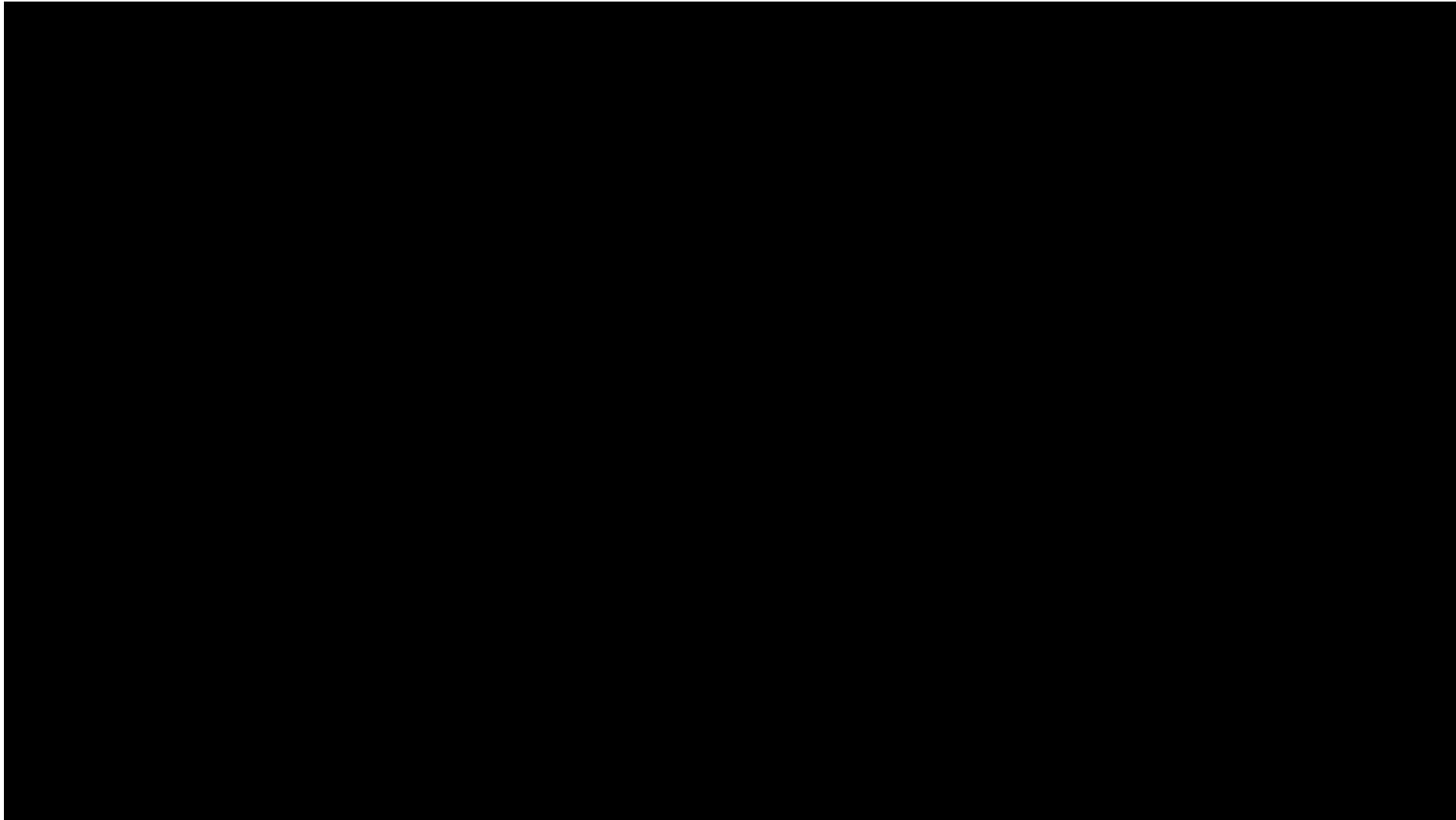
Rent

Use

Return



Automated Reusable Cup Management Solution



Automated Reusable Cup Management Solution

	Rental Bot	Collection Bot	Reusable Cup
Design			 16oz
Spec	- Power : AC220VM 50(60)Hz - Network : LAN, WIFI, LTE	- L : 745 W : 550 H : 1750 - Capacity 400EA	- Size : 16oz - Material : PP, BPA Free

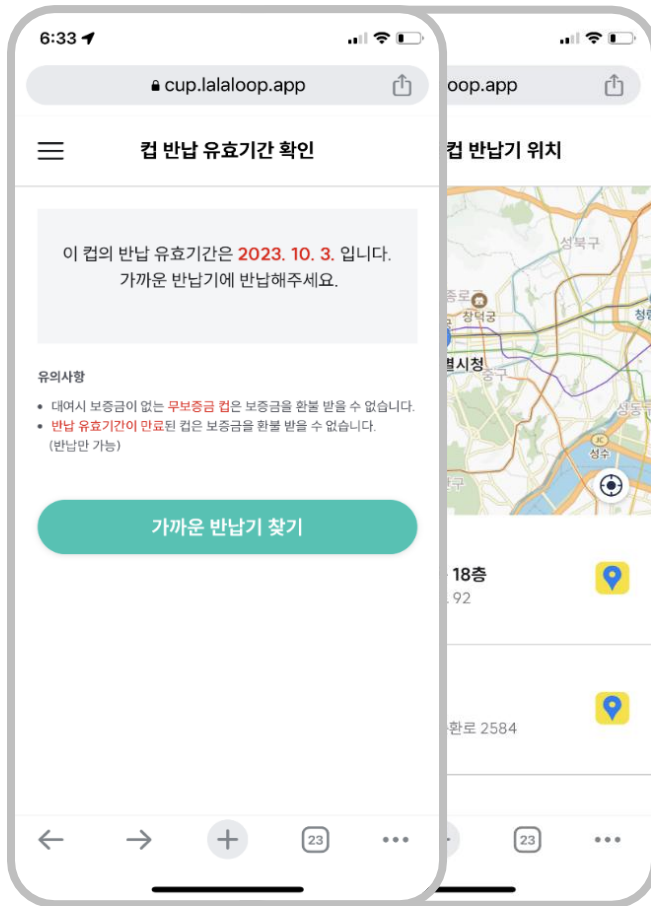
5 Product - Lalaloop Reusable Cup system

Prioritize user experience over cafe design. Aim for a more efficient and intuitive platform that fosters growth and expansion



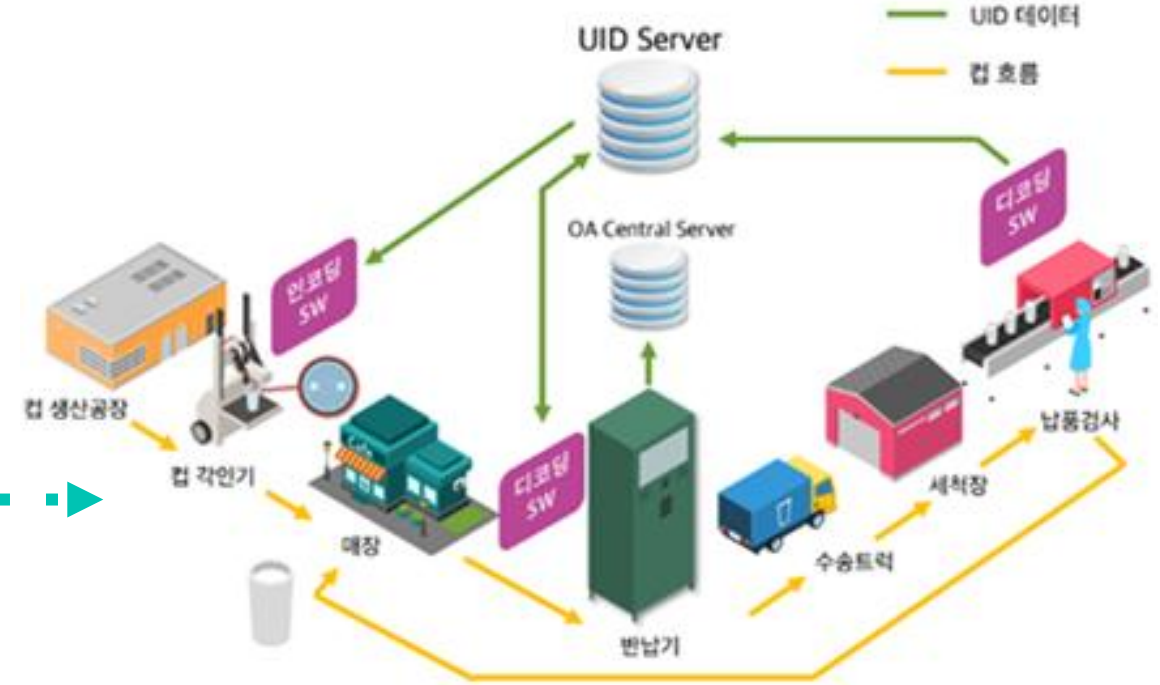
5 Product - Lalaloop Reusable Cup system

Track the entire flow of circular resources with LalaLoop ID



LalaLoop ID

(QR, Barcode or RFID)



Cup life cycle tracking

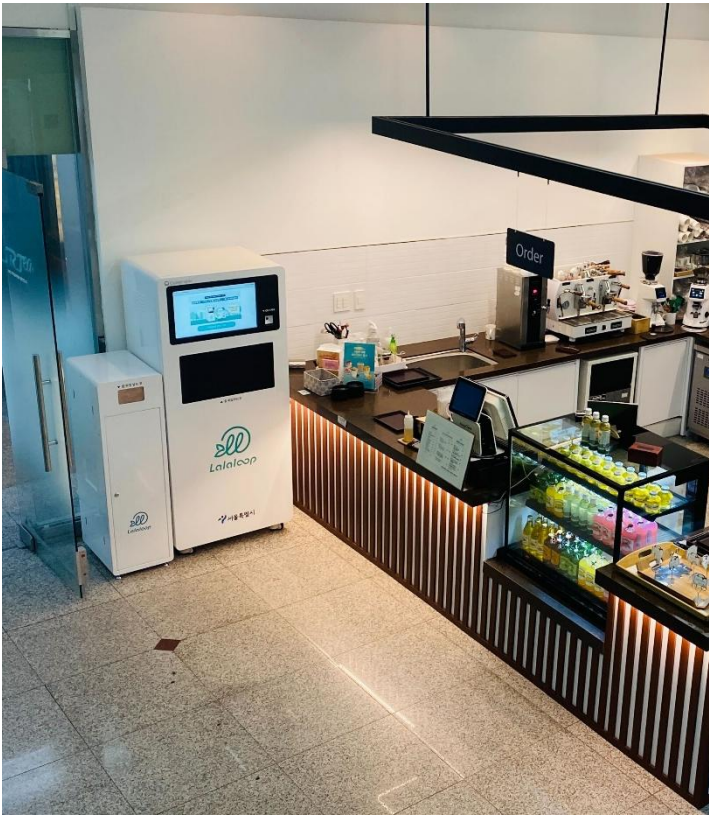
5 Product - Lalaloop Reusable Cup system

Faster extension with Seoul Government Subsidy

yster able



서울특별시



SR Suseo HQ Cafe



Hanhwa Energy Solution HQ



Seocho-Gu city hall cafe

⑥ Why Lalaloop - overview



The biggest circular infra and reward app leading circular economy in Korea

Cumulative bots

1041_{ea}

Cumulative Users

112K

MAU 16K, App rate 4.3

Accrued Revenue

6.2M_{USD}

B2G 3.1M, B2B 1.6M

Cumulative installation

6 Why Lalaloop - overview



62+ Impact Partners



In South Korea 2023

Diverted Waste from
Landfill & Oceans

624 Tons

Eliminated
Single-Use Plastics

10M Cups

In South Korea 2019~

Installed Bots

1041+

Cumulative Users

112K

⑥ Why Lalaloop? Success Cases – emart with GS1 Korea

Lead the participation and good recycling results

- emart at Songpa-gu local gov case, 5675 households, 25 collection bots, 6 months

Previous case




Recycling/month

13.5kg

2500% (335kg)

Monthly User

24

3700% (895)

Reward usage

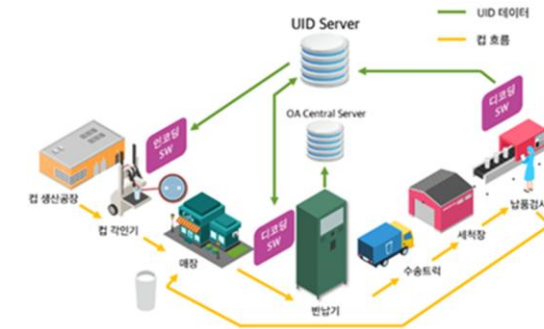
5%

70%

⑥ Why Lalaloop? Success Cases – Starbucks

Commercial project for DPP and closed loop - Reusable containers for Zero Waste

- 50 Starbuck in Korea with trackable reusable cup system DRS operated with custom branding



Reusable Cup life cycle tracking

Return rate

Avg 85%

Usage

63,000

Single-Use Cup
Reduction

57%

6 Why Lalaloop? Reference

Broad market share with F&B industries and Gov. references. Food and beverage companies, retailers, cafe franchise, and chemical companies interested in reducing their carbon footprint.

Recycling Value chain



Local recycling Value chain building



Package collecting and recycling solution POC



Residential area recycling resource collecting POC

Reusable Value chain



Reusable cup circulation management system



Reusable food container collection system



Reusable shopping bag collection system

6 Why Oysterable? Government's choice

Selected service for Korean Government Smart city and waste reduction policy

Our products have been reflected in Seoul's three-year waste management plan and urban development projects led by the Ministry of Environment and the Ministry of Land, Infrastructure and Transport to dominate the market.

910ea + 3000ea ▲

Existed bot New bot with main project until 2026



Collection bot



Station with 5~8 bots



[Seoul Gov. Single-use plastic policy announcement](#)



National Smartcity project in Sejong & Ulsan

6 Why Oysterable? Smart city's choice

Selected service for Ulsan Smart city project

Proven product by Ulsan product for all citizen to have better clean city. We can change the recycling value chain to make it better circular economy with data.



6 Why Oysterable? Clima-tech startup with real Impact

Data driven impact startup

SDGs12/13 for sustainable city service with data proven solution

SDGs Impact

Reduce waste generation by
making recycling and reuse routine
(carbon reduction)



Outcome

E

Increased actual
recycling/reuse rate

E

Recycling and reuse
become routine

Recycling rate

24.5% →
68%*

Reusable return

80%**

Single-use cup
decrease

57%**

Recycling action

45 times/
Month/person

Recycling User

16,000 +
App MAU

Reusable User

63,000 +
App MAU

Output

Recycling Bot
Installation

750ea

Reusable Bot
Installation

202ea

Rewarded user

1570/Month

Registered User

102K+
App User

Deposit(Acc.)

21M USD

Participations : Reward app Monthly Active
User(9300 at 2022)

*M.O.E – Sonpa-gu P.O.C.(2016~2017)
- Carton recycling rate (68%)
Emart P.O.C.(2018)
- Recycling increased (13.58Kg >>
336Kg, 25times)

**Reusable cup return rate
- 6300 Returns/Reusable bot/Month
(80% return rate)
- 400 of 700 coffee serves with
reusable cups per day at Starbucks
Seoul/Jeju/Incheon/Ulsan

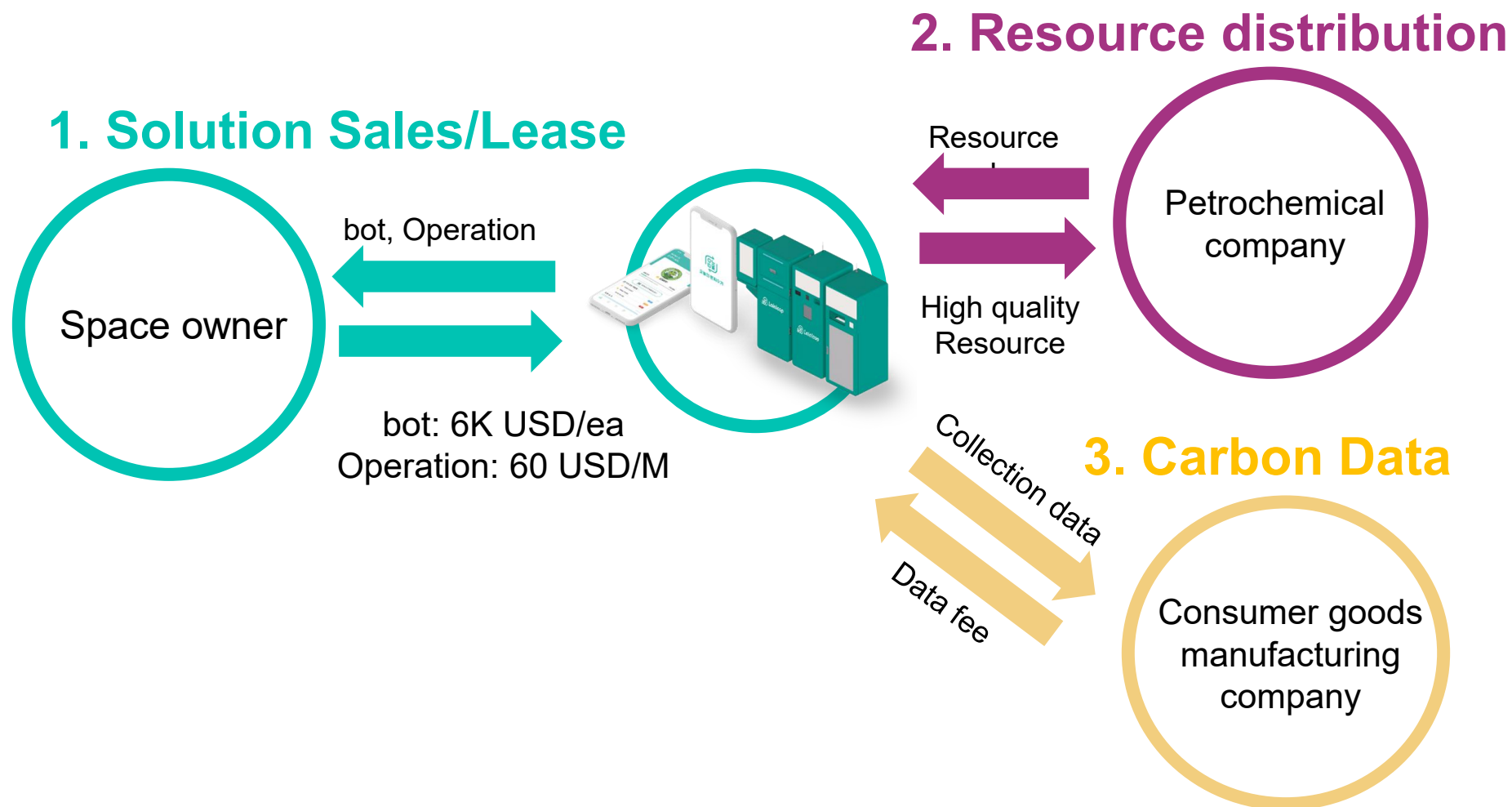
7 Competitor Comparison

We are much more than just a Deposit Refund Scheme (DRS) Affordable and Scalable Solution

	T* 	E* 	 
Coverage	Can, PET	Can, PET	All Recyclables and Reusables
Gamification	X	X	Brand rewards and coupons
Deposit	✓	✓	✓
Multi-Payment	X	X	✓
Price	40K USD	40K USD	From 6K USD
App Integrations	X	X	✓
Data Tracking	X	X	Digital passport & Web Console
Ad Platform	X	X	Bot Display and in App Marketing

8 What: Business Model [Revenue Sources]

From bot sales to Plastic resource distribution and Carbon Data





Oyster able
Bae Taegoan, CEO
+82-10-8681-3157
tk@oysterable.com

A photograph of a young girl with dark hair and bangs, smiling and looking slightly to the right. She is wearing a light purple shirt and brown overalls. The background is a brick wall.

THANK YOU