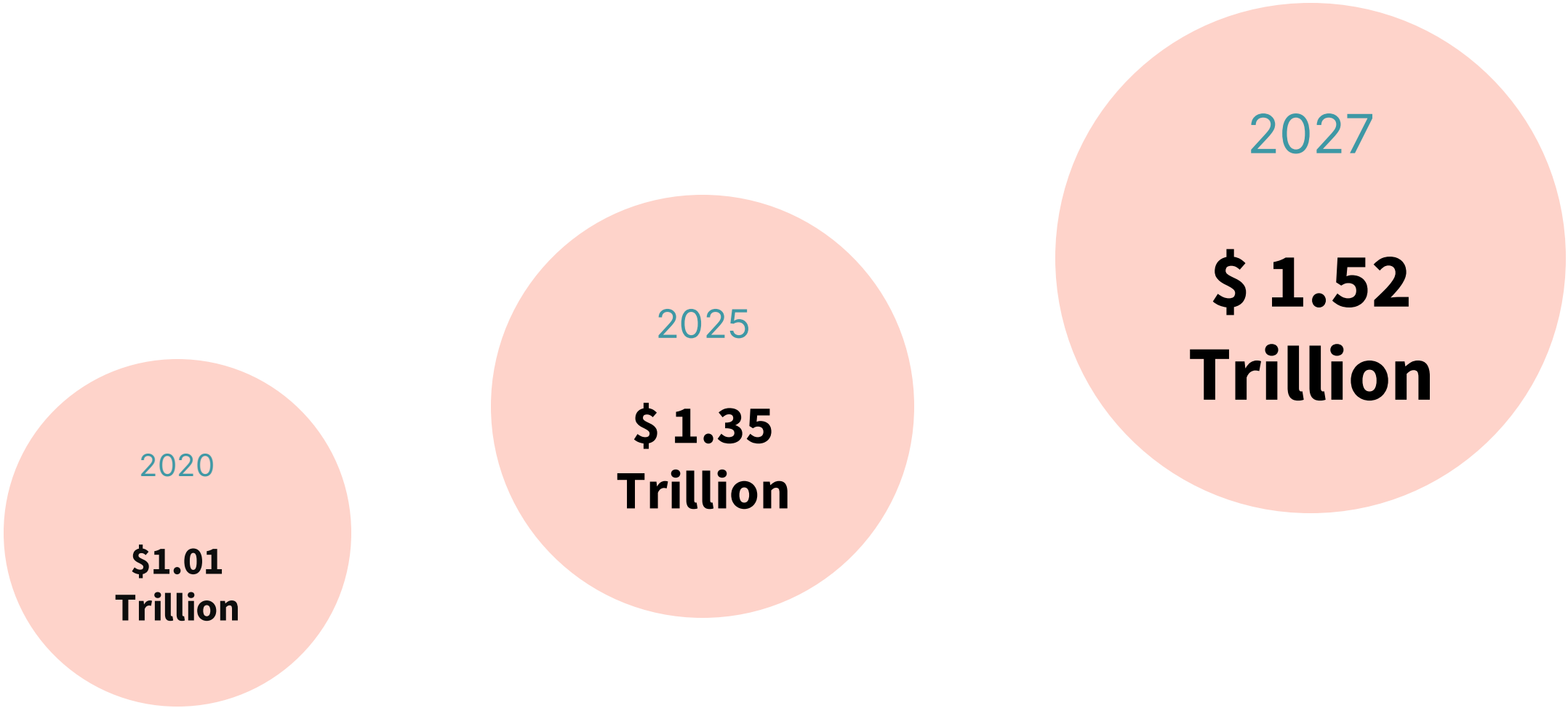
TrackTag

A package tracking solution for retailers

Thesis by

VAIBHAV GAIKWAD

How big is the online retail industry?



https://www.statista.com/statistics/272391/us-retail-e-commerce-sales-forecast/#:~:text=Revenue%20from%20retail%20e%2Dcommerce,will%20exceed%201.5%20trillion%20dollars.

Around, 1.7 million packages go ‘missing, lost or stolen’ in major US cities, everyday, contributing to $25 million loss in goods and services

8% of packages

are either lost or stolen during the delivery process.

16% of consumers

stop buying products from a business if they don’t get their delivery on time.

https://www.newschannel5.com/news/report-1-7-million-packages-stolen-every-day

“By the time this presentation is over almost 20,000 packages would be lost, stolen or misplaced contributing to $300k loss in revenue”.

Why do packages go missing?

Human error

Package scanned incorrectly during transit

Mistakes during sorting for transfer

Errors in record keeping of packages

Poor handling

Delivery

Unclear delivery instructions

Delivered to incorrect address

Absence of signature verification

No post delivery confirmations

Labelling errors

Poorly placed labels

Usage of multiple labels on same package

Label damaged beyond recognition

Who is the impacted user?

Meet Jake

Graduate from an Ivy business school

Entrepreneur with 5 years of retail experience

Owns an electronic retail store

Strives to present a secure image of his brand to his customers

Animation: https://docs.metahuman.unrealengine.com/en-US/metahumans-sample-for-unreal-engine-4.26.1/

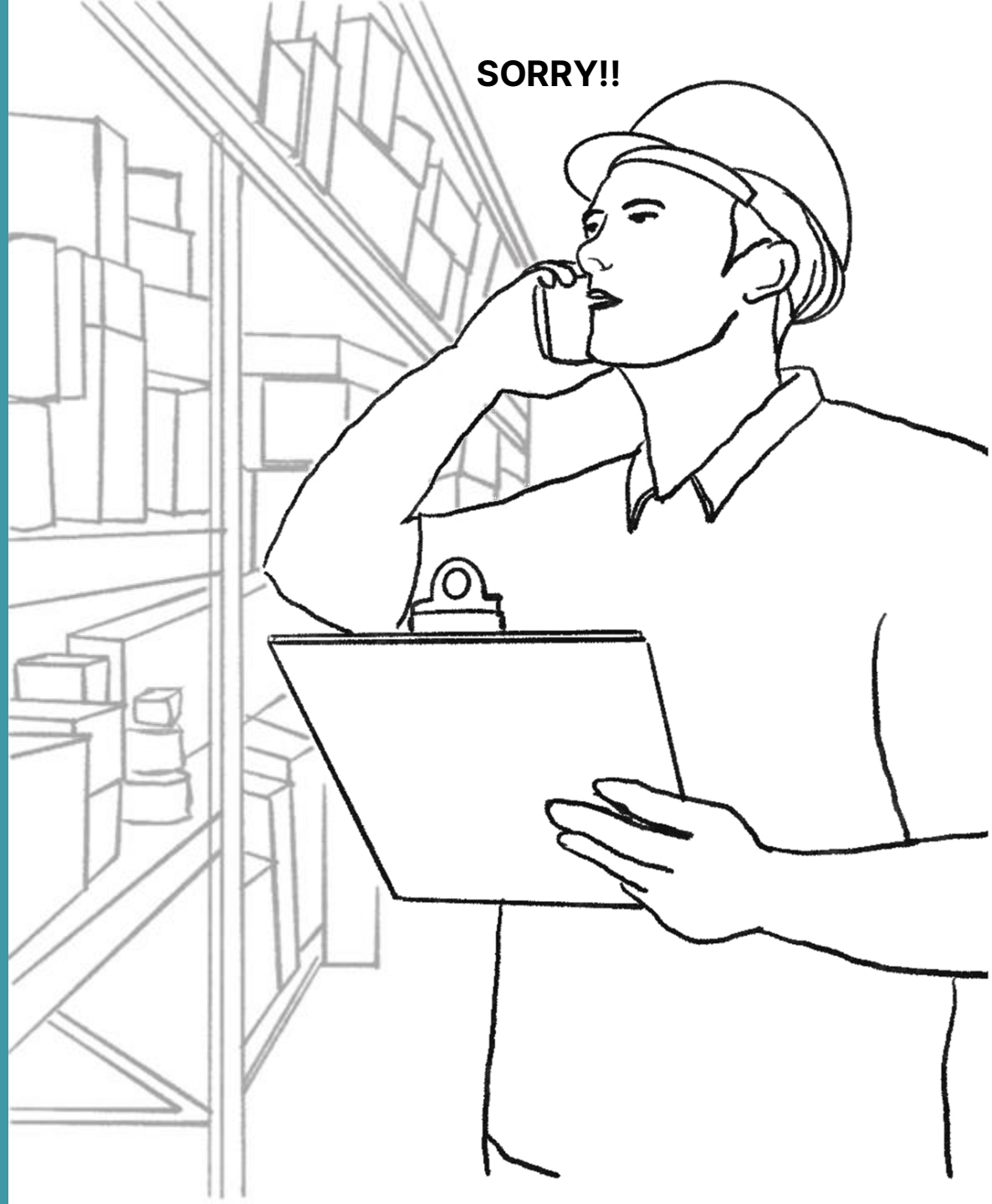
3
CONVEYER BELT
FedEx

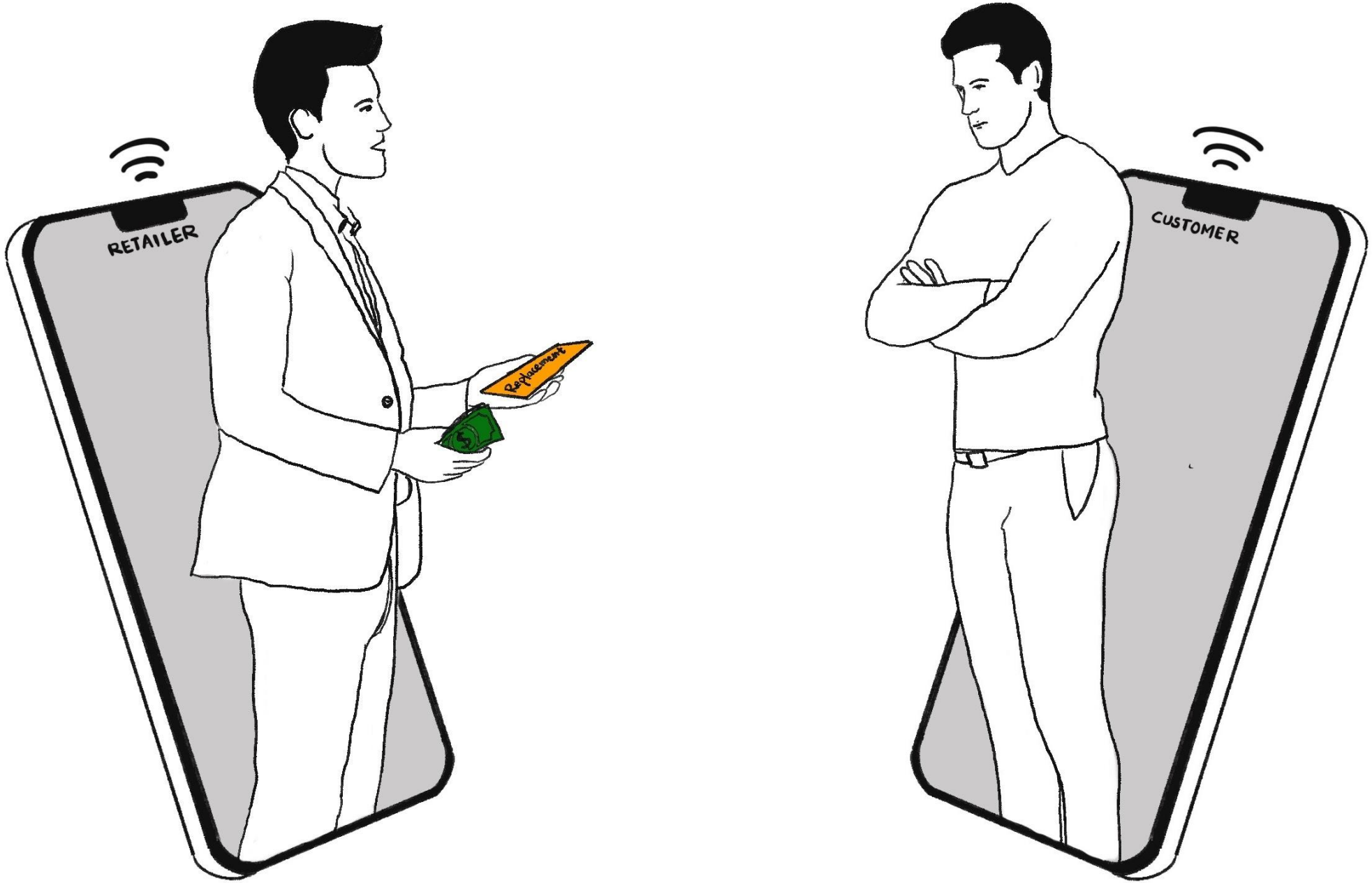
Chats
FEDEX
[FEDEX]: There is a package that needs to be delivered for you but is pending an update.
[FEDEX]: ALERT: We are not able to make your delivery as scheduled due to an error; please proceed to
http://fedex.delivery.com/shipments

OFFICE

DELIVERY
SORRY!!

SORRY!!


SORRY!!


RETAILER
Replacement
CUSTOMER

How Might We

Improve the accuracy and reliability of package tracking in online deliveries

Reduce financial losses to the retailer and his business

Reduce the damage to retailer’s brand’s reputation

Introducing TRACKTAG

TrackTag is an RFID based tracking tool which helps retailers accurately and reliably track any package with an RFID attached tag to the package itself.

Our Mission

Empowering retailers with innovative RFID package tracking tool for streamlined logistics, enhanced visibility, and improved customer satisfaction, fostering trust and growth.

Add and Search for tags

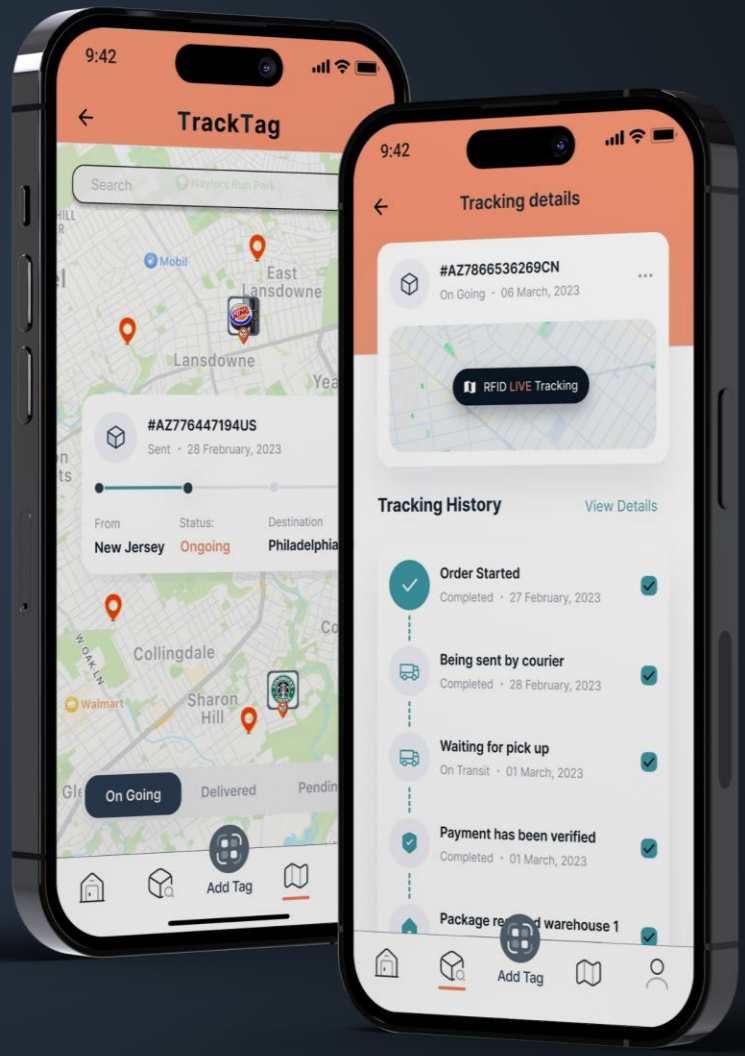
Effortlessly add the RFID tag by scanning the tag barcode

Find packages instantly by searching for RFID tags ID

Live RFID tracking

Stay updated on-the-go with accurate live RFID tracking

Access your package tracking history anytime

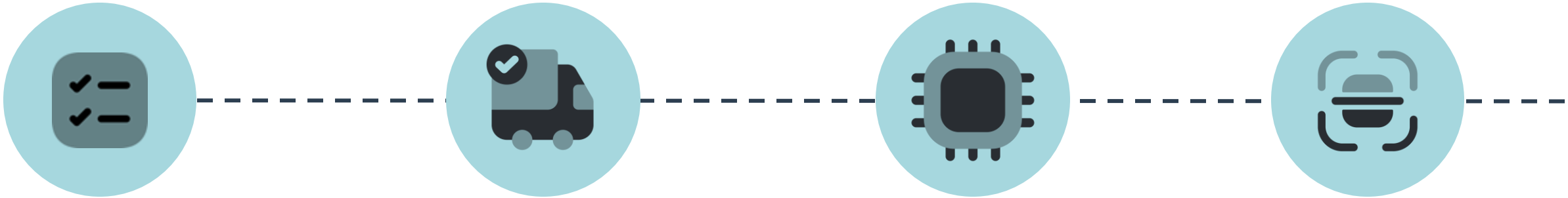


Data analysis and Smart notifications

Make informed decisions by insightful data analysis

Get smart notification updates on package status

How it works



Subscribe to TrackTag

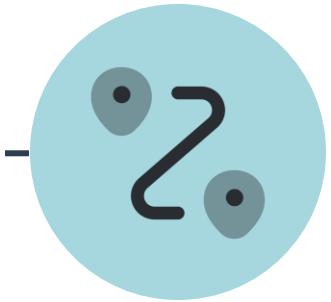
RFID tracking tags delivered to the address

Login onto the TrackTag application

Scan device barcode and add tags through camera or manually add tag with device ID

Attach the RFID tag to the package or product to be shipped

Ship the package as usual



Track the package live in real time

Get latest notifications and updates about the delivery

Functionality

Computer/Mobile Database

Data is transmitted into the RFID database where it can be stored and evaluated

RFID Reader

Connected to the antenna wirelessly and receives data from the RFID tag

RFID Tag

Attached to the package or product to transmit tracking data to the antenna

Antenna

Receives the stored data from the tag and transmits the data to an RFID reader

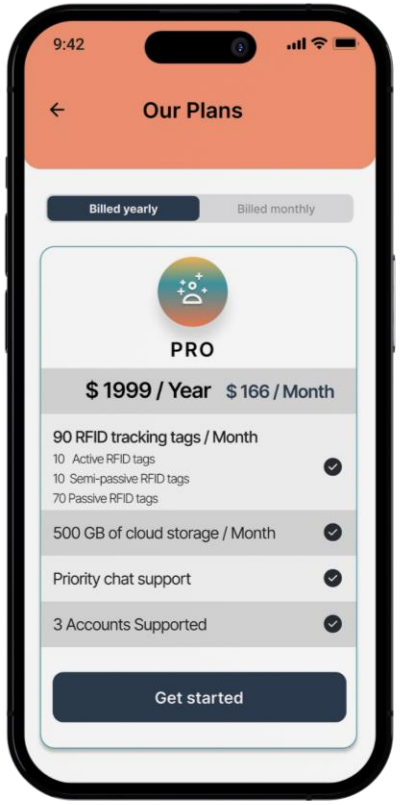
Business Model

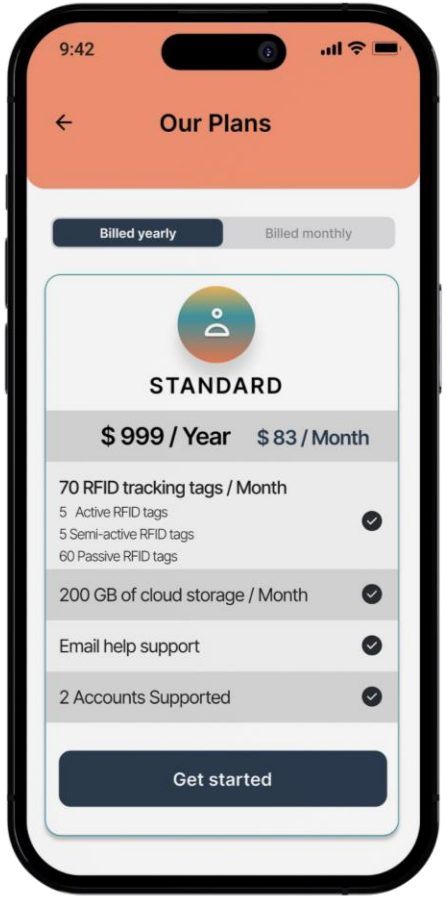
Plans and Subscriptions

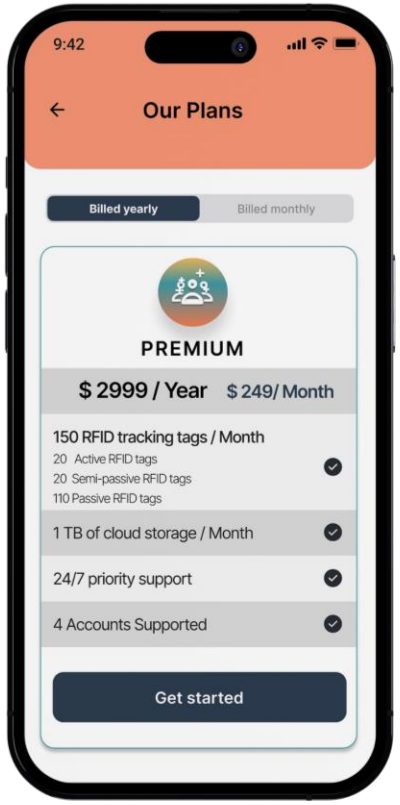
Unlock the full potential of our RFID package tracking application with our standard, pro or premium subscription, granting you access to advanced features, priority support, and exclusive updates for a seamless tracking experience

Billed yearly | Billed monthly

Get 2 months free if you pay yearly



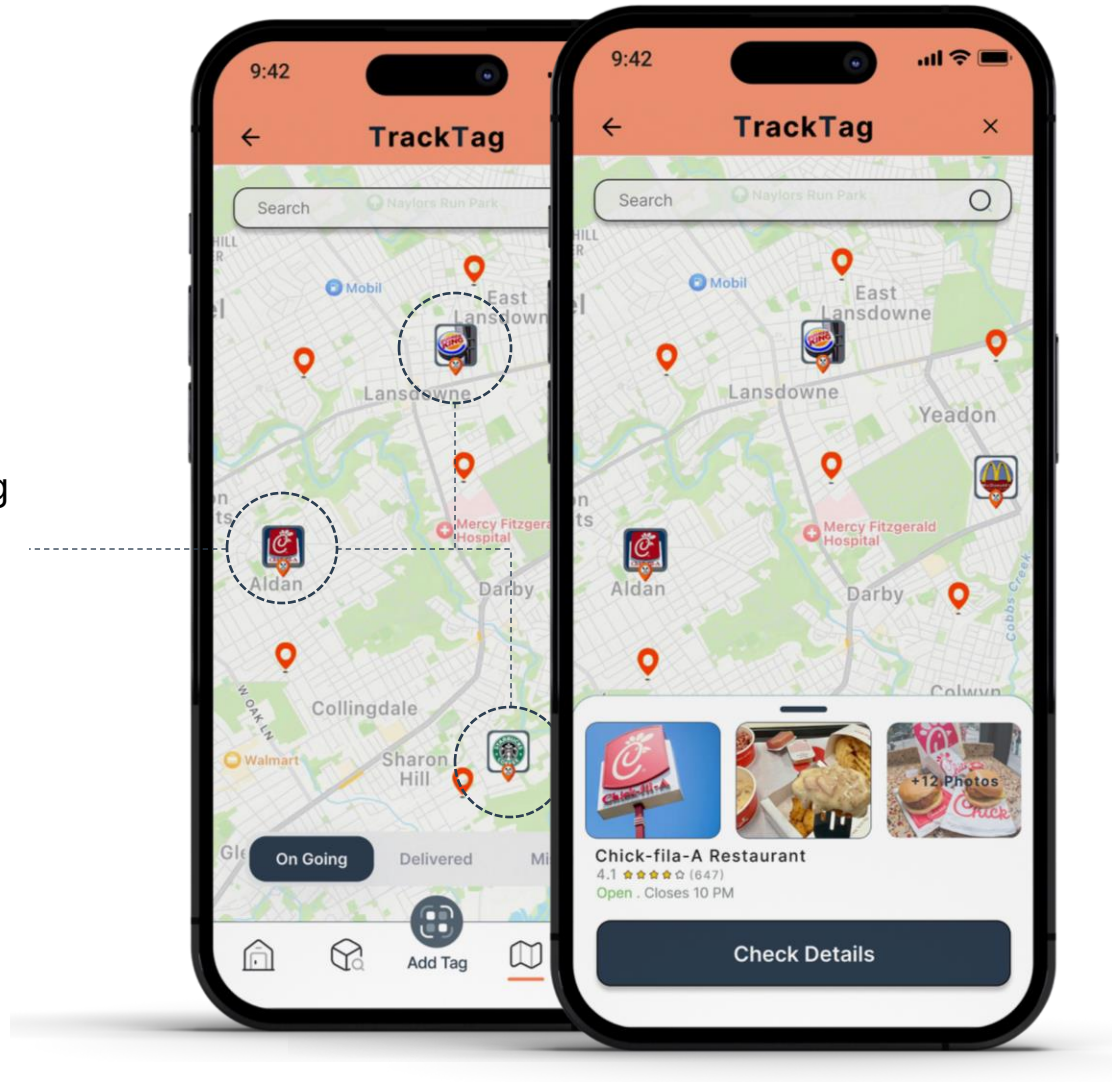




Secondary Revenue

Native advertisements with Sponsored content or Partnership

Cost-per-Click (CPC) from sponsored advertising ranging on average of $0.50 - $0.60, depending on the partnering industry and the business.



Usability Testing

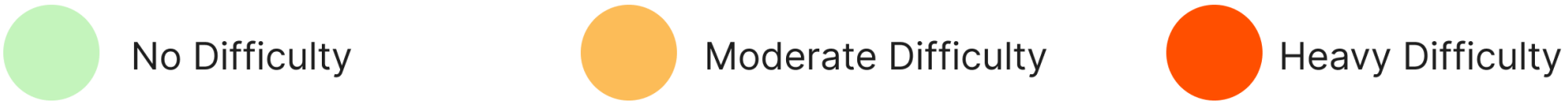
Key findings for usability testing

- Positive feedback received on intuitive interface and efficient tracking features.
- Accessibility guidelines for interface improvements.
- Clear instructions for CTA buttons.
- Navigational and user flow recommendations.
- Revenue highlights and models.

Participants	Total Number	Experience	Countries
	05	>05 Years	01
Test data	**Testing hours**	**Tasks completed**	**Total issues**
	03	25	23
Average Score	**Confidence score**	**Ease Score**	**Success rate**
	91.6%	90.4%	93%

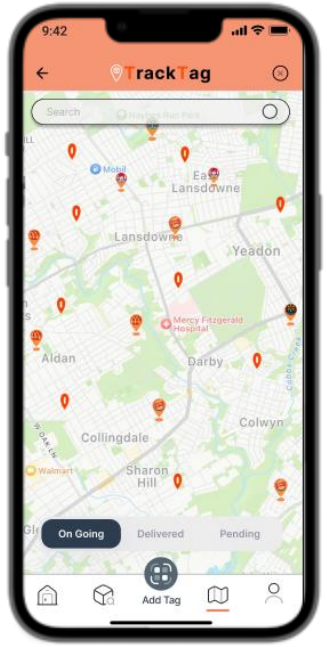
Usability Testing

	Task 1	Task 2	Task 3	Task 4	Task 5
User 1	03:10s	01:10s	00:54s	03:34s	01:05s
User 2	06:50s	03:47s	04:56s	04:14s	00:56s
User 3	02:58s	03:38s	02:56s	00:54s	01:13s
User 4	05:37s	02:11s	00:45s	01:14s	01:06s
User 5	01:54s	00:43s	00:48s	01:32s	00:56s

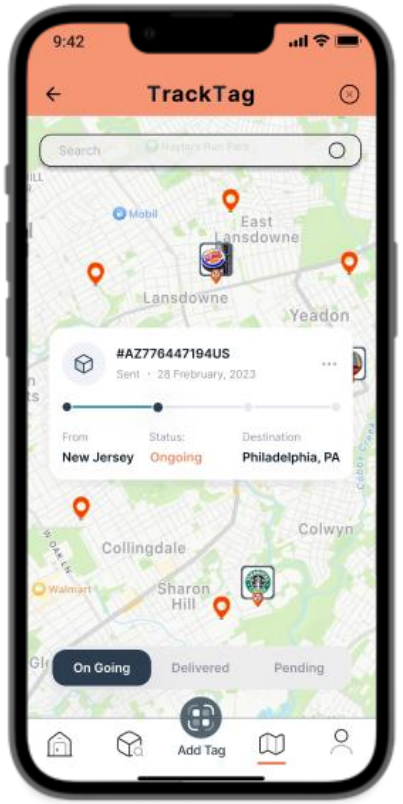


Key Updates

Before

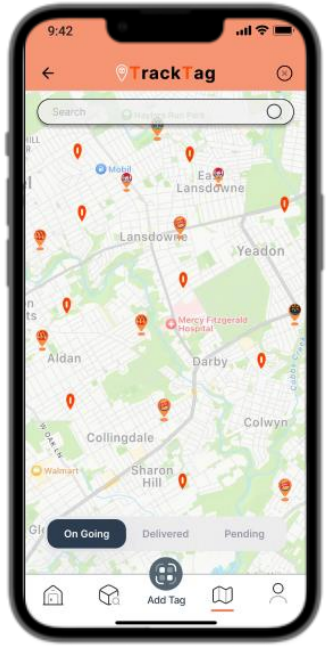


After



Getting information from the RFID tag on the same interface instead of going back

Before



After

Making the advertisements informative and clear to understand on the map

Market Validation

01

Risky Assumption

The active RFID tags will be durable enough to withstand harsh environment and delivery conditions.

XYZ Statement

At least **4 / 5** trackers will successfully reach their destination without any physical damage or wear and tear.

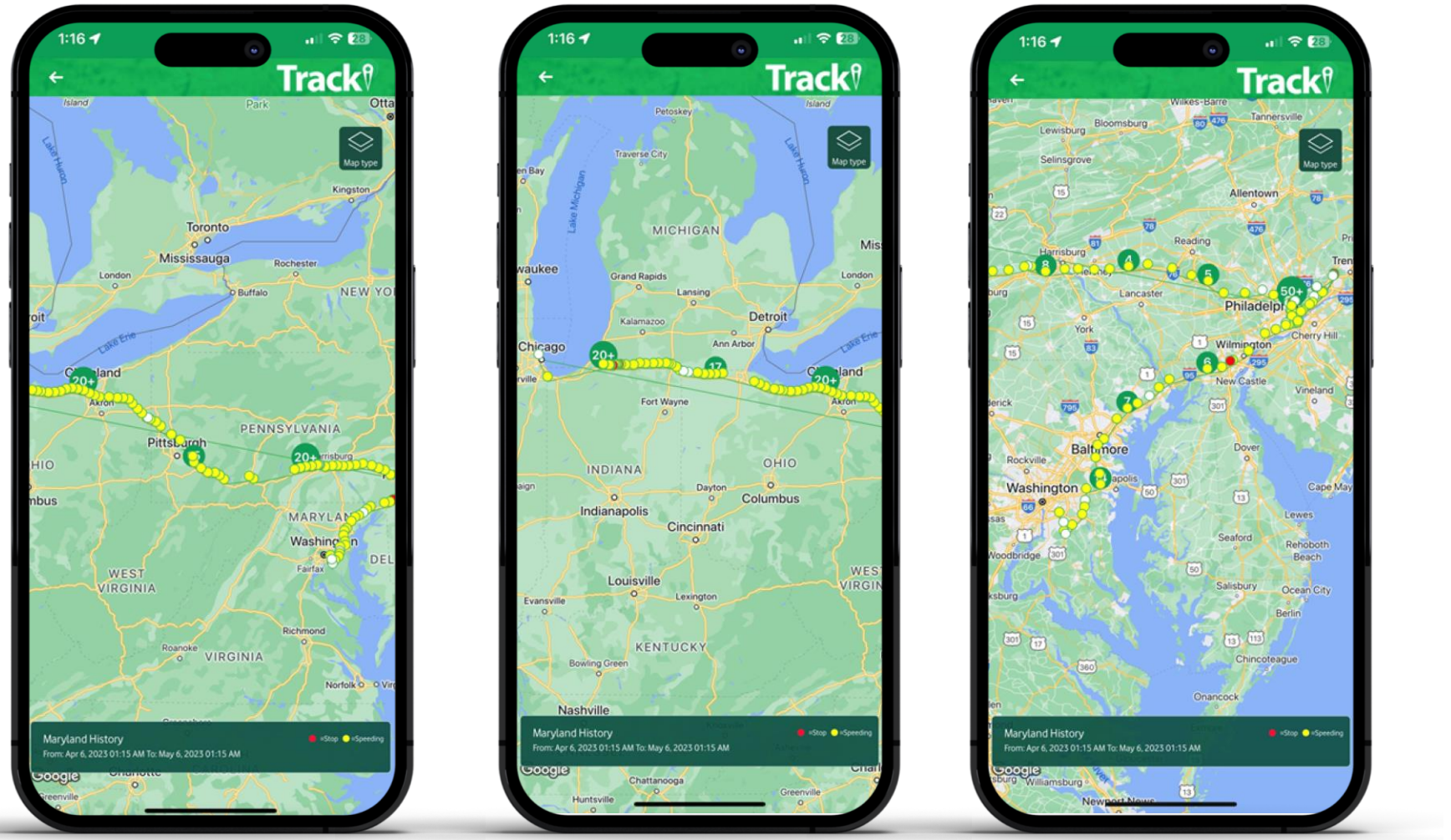
Pretotyping : Impostor

Video map: https://travelboast.com/

Market Validation

Result : FAIL

3 / 5 trackers successfully reached their destinations.



Market Validation

02

Risky Assumption

Retailers will not revert to alternative or traditional tracking methods.

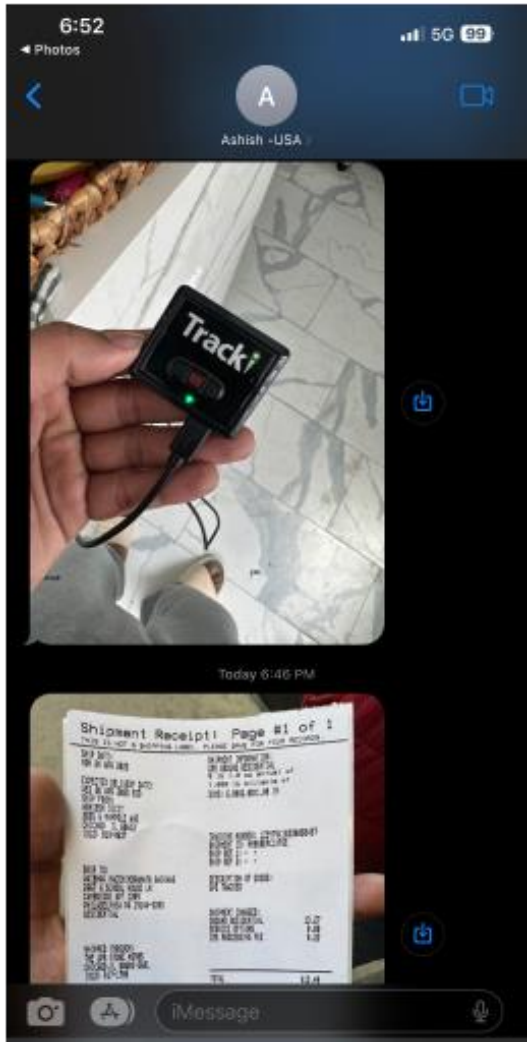
XYZ Statement

At least **4 / 5** retailers will find tracking technology to be a reliable method for tracking packages and use them for their future deliveries.

Pretotyping :

Mechanical Turk &

One Night Stand

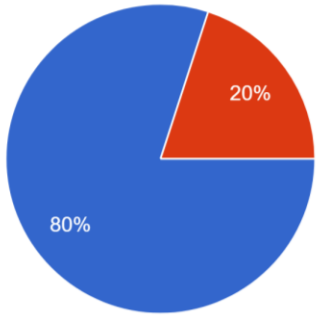


Market Validation

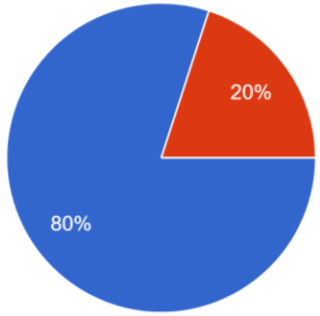
Result : PASS

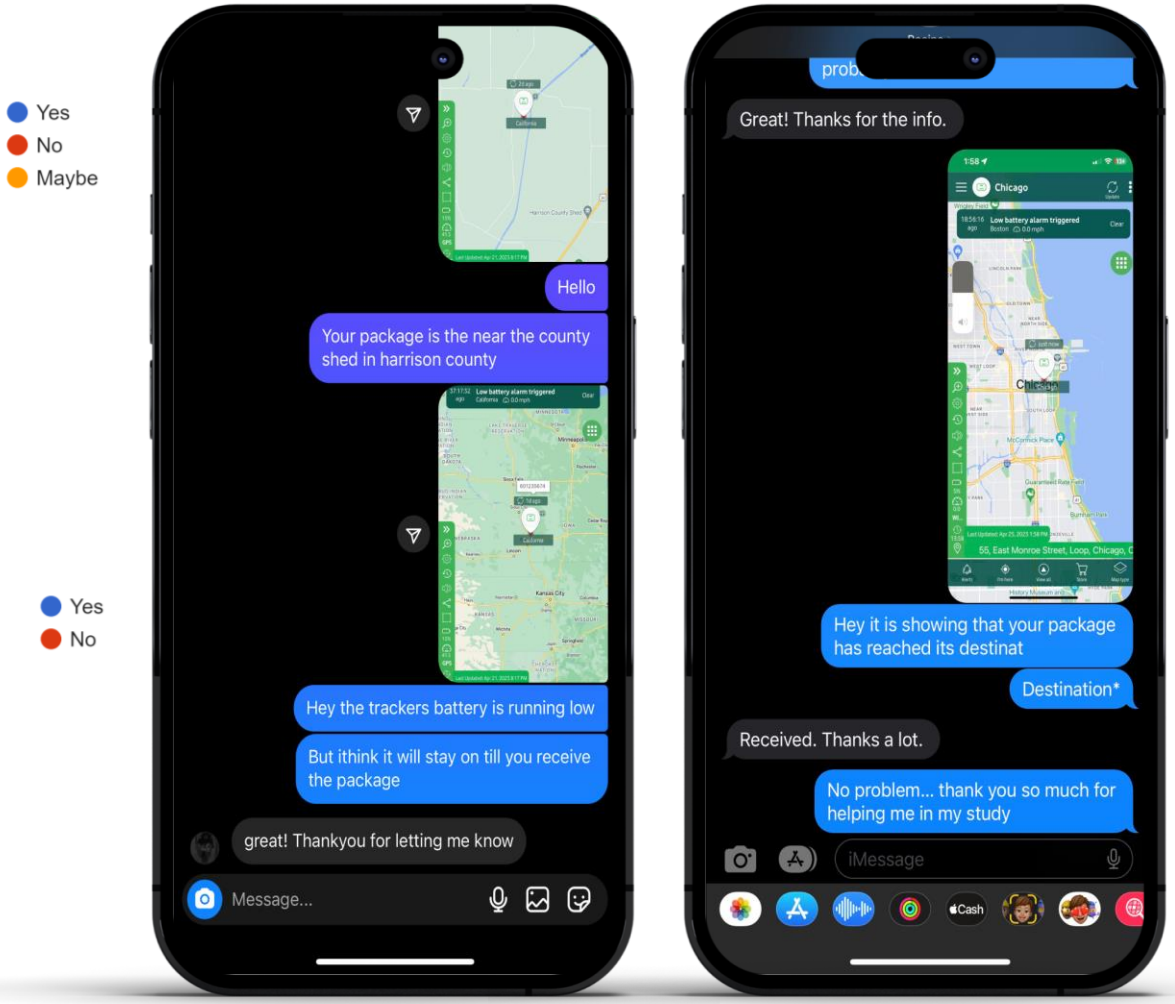
4 / 5 retailers will be willing to adapt to RFID tags tracking technology for tracking packages in deliveries.

Will you be willing to participate in another study?



Will you be willing to do the study in the next couple of days itself?





Market Validation

03

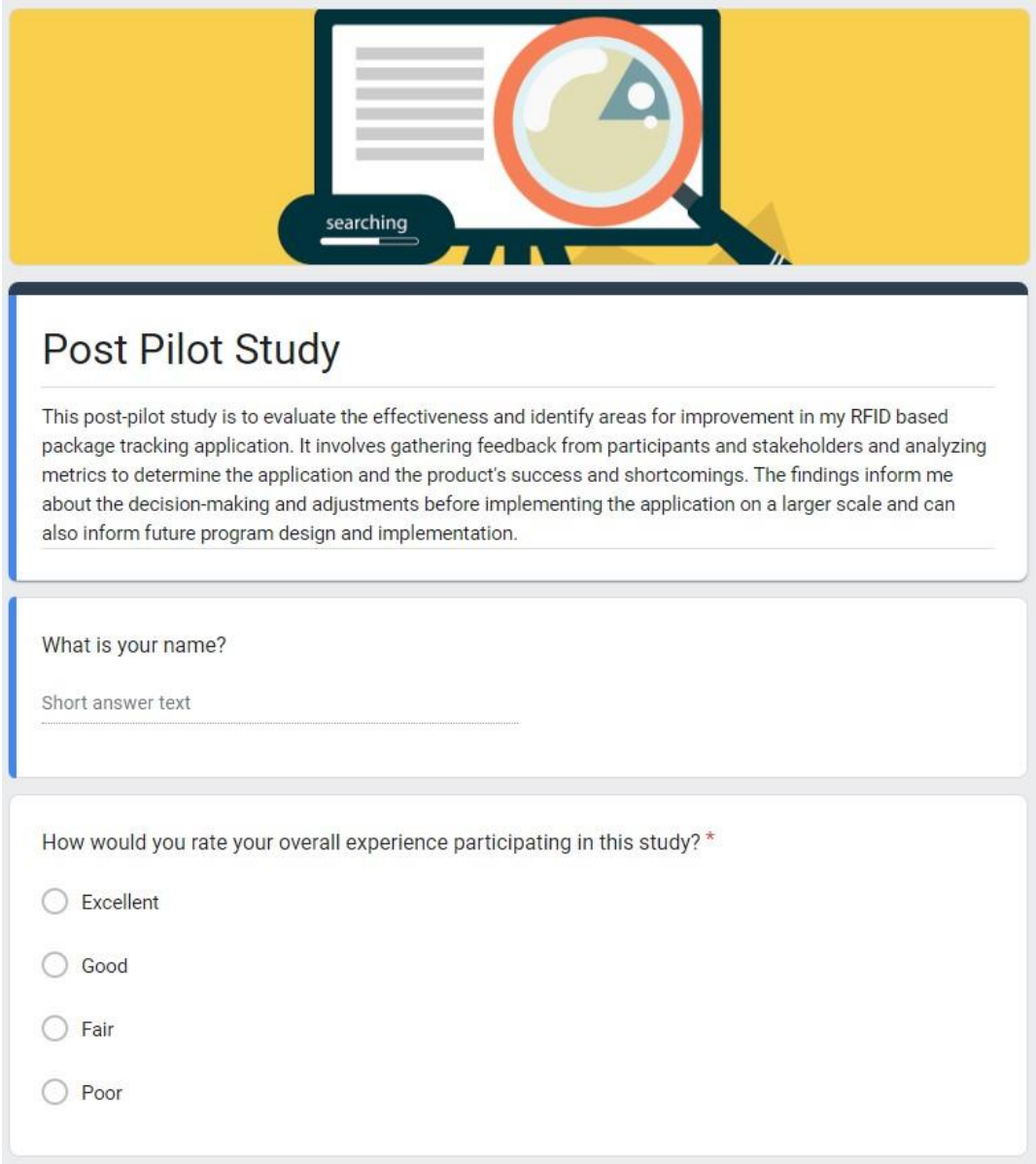
Risky Assumption

Retailers will trust the accuracy and reliability of the RFID technology.

XYZ Statement

At least **4 / 5** retailers will rate the accuracy of the tracking technology a perfect score of 5/5.

Pretotyping : Impostor

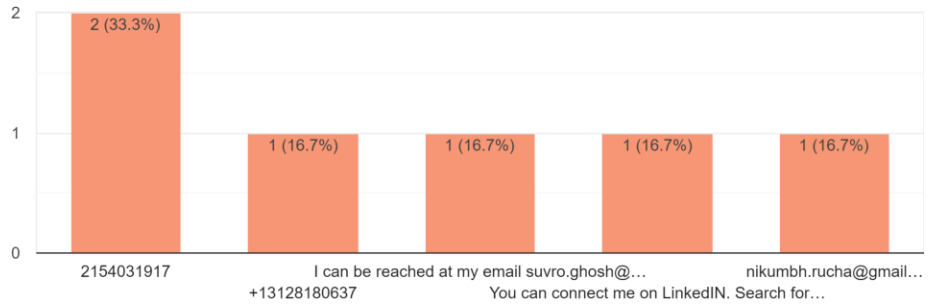


Market Validation

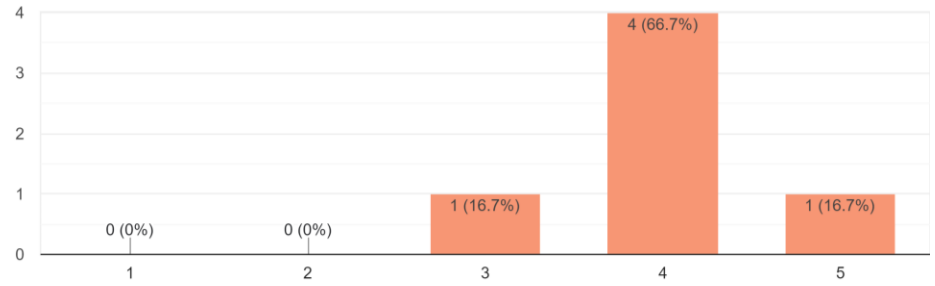
Result : PASS

4 / 5 retailers rated the accuracy of this tracking technology and service as a perfect score.

How can I contact you for the next study?



Rate the accuracy of the tracking information?



Business Strategy

SHORT TERM GOALS

01 Increasing package tracking accuracy

02 Reducing additional labor expenses

2023

03 Enhancing inventory management

04 Streamlining operations

Business Strategy

LONG TERM GOALS

01 Increasing customer loyalty

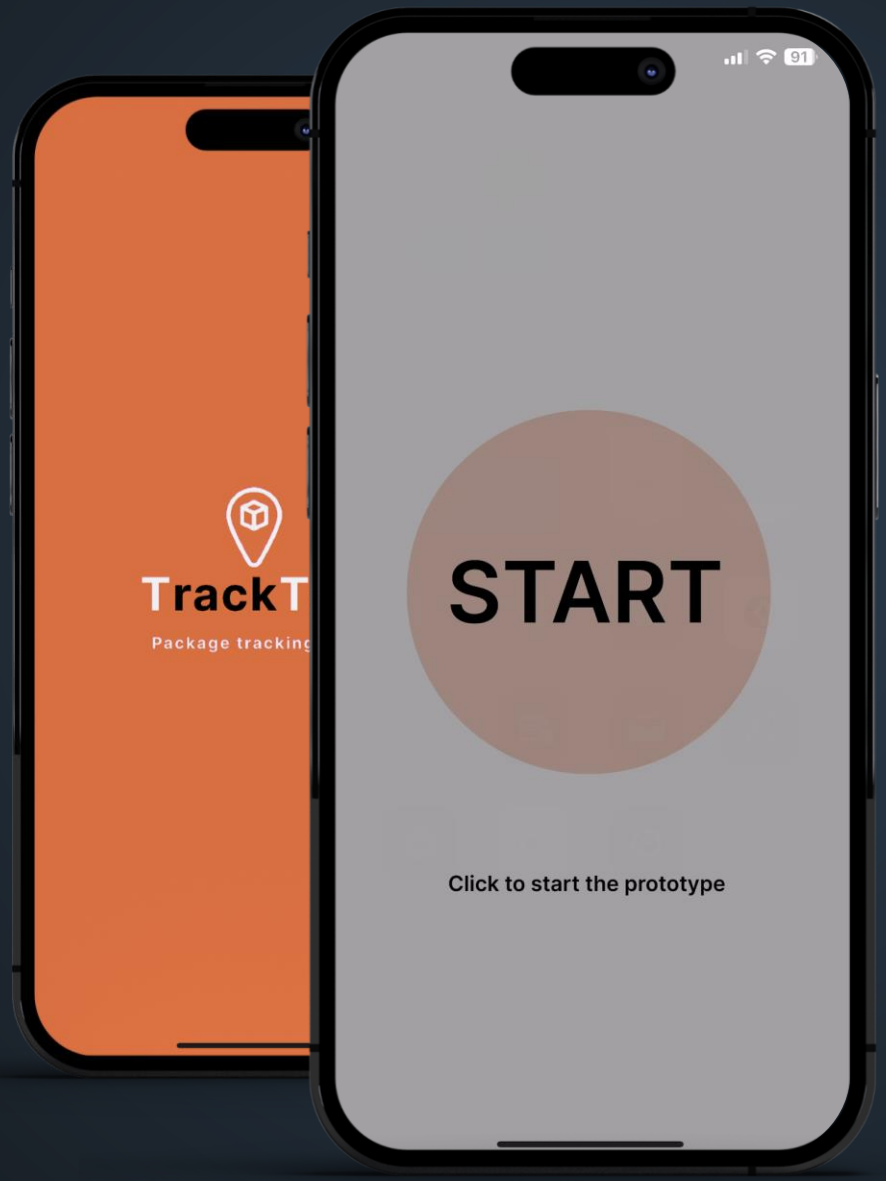
02 Improving profitability

2024 — 2025 — 2025 — 2026

03 Enabling new business models

04 Improving sustainability

Digital Prototype



Next Phase

01 Integration with other tracking systems

02 Advanced analytics

03 Increasing Scalability

Prototype

Prototype Link:

https://www.figma.com/proto/NIbTA1cEgjK9X891letwjk/Prototype---Thesis-Defense?page-id=0%3A1&type=design&node-id=4-8406&viewport=5083%2C1848%2C0.59&scaling=scale-down&starting-point-node-id=4%3A8406

THANK YOU

ANY QUESTIONS?