Selected directions out of the pool of ideas

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Direction 1 : Affordable Integration

People + Industries + Mobility Services

User -
Contract/Daily wage workers

●

Direction 2 : Empowering Public Transport

People + Tourism + Mobility Services

User -
Tourists, Students, Upcoming service sector workers

Direction 1 - Existing industrial scenario mini case study

- Vizag being a industrial focused city, it houses more than 70 Large scale industries, more than 80 medium scale industries and several small scale industries
- Majorly comprising of heavy industries like steel-plant, shipyard, pharmaceuticals, chemicals etc.
- One of the heavy Industry is Vizag steel plant, being one of the oldest and industries in the city with a lot history and pride involved for the locals, a major population depends on it for employment and livelihood
- **So we decided to study to do an immersive study on how people working in VSP on travel and tried to understand their mobility challenges keeping in mind the changes the industry is going through and how it will shape in future**
- Aim is to understand the mobility scenario in industries so by understand the largest industry area wise we can also cater the solutions for other similar large scale industries or controlled spaces like Visag port, shipyard limited etc

3000+ ha
Vizag port trust

13,000+ ha
Vizag steel plant
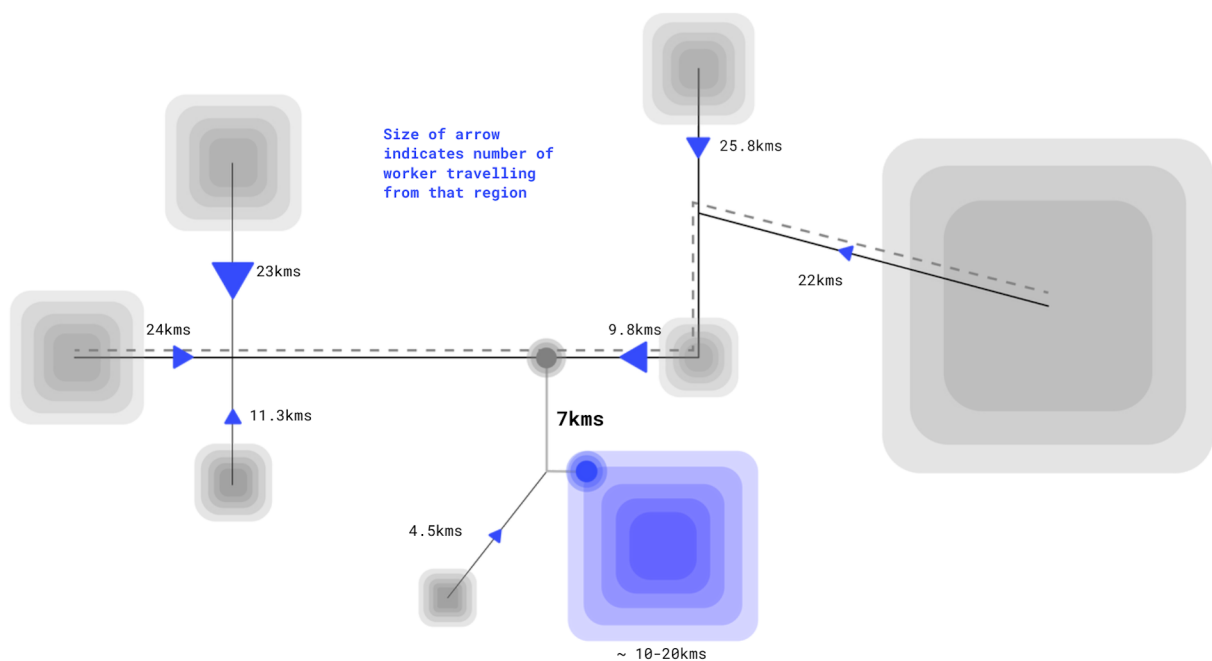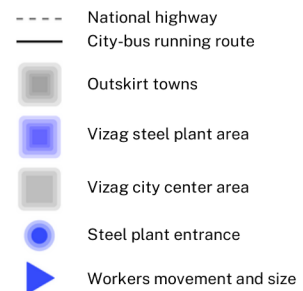
70+ Large scale industries
80+ Medium scale enterprises

17,000~ permanent employees
20,000~ contractual workers
**40,000~ Daily wage workers**

- **Flow of people -** Identified all the major towns/areas in outskirts where employees live and travel from and visualized a schematic diagram with the distances from each place to steel plant main gate

Distance covered by labor workers from their respective towns to VSP entrance

---- National highway
—— City-bus running route

☐ Outskirt towns

☐ Vizag steel plant area

☐ Vizag city center area

● Steel plant entrance

▶ Workers movement and size

Size of arrow indicates number of worker travelling from that region

25.8kms

23kms

24kms

9.8kms

22kms

11.3kms

7kms

4.5kms

~ 10-20kms

- **Existing mobility scenario for the journeys based on above flow of people -**
  Once the routes and flow of people were defined, the respective modes used to travel were identified through stakeholder interviews and experiencing some of the journeys ourselves
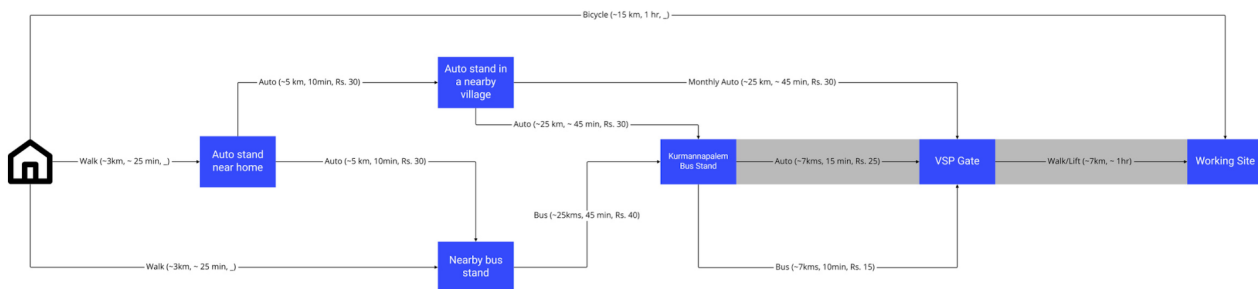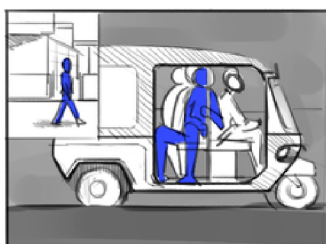

Findings
- Multiple modes were used for a single journey which take up a lot of time in waiting and changing modes
- There is no means of public/private transport available after getting inside VSP main gate and still there is more than 7kms of journey left that needs to be covered by daily wage worker to reach to their working sites
- Asking for lift or walking is the only way to cover this distance
- As until this point there is some means available for travel so we decided to provide an intervention for the journey inside VSP
- **A single person travels around 100kms which takes around 5hr out of his single day**
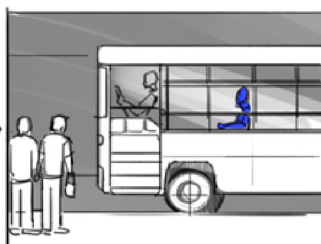

"I am ready to pay extra money if the industry provides me something to travel from working site to main gate"
- Daily wage worker, VSP

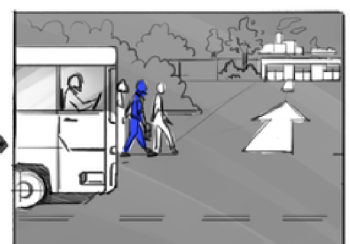# User journey map for direction 1

- People use multiple modes to travel

- People reach to the entrance of Steel plant through auto/bus

- People walk to the VSP main gate from nearest bus stop

- Reaches working site and start their respected heavy labour work

- End up walking as everyone is in rush and generally does not give lift

- People try their luck and wait for lift for further distance

" After 2 hours of travel one way then working whole day by lifting and carrying heavy objects to travel again for so long make workers very tired and effects their morale when going through this everyday "

Brief for direction 1

- **WHY**

Heavy industries employ as many as 20,000 contract workers. Most of these workers travel around 50kms each day through multiple buses and autos which takes around 4-5 hrs. daily and costs around Rs. 3500 per month

- **WHAT**

Connectivity solution from the main gate to the working site such that the solution can also be used for some work during non-peak hours

- **WHERE**

Industries situated on outskirts spread across 100's acres with highly controlled space

- **WHO**

People who work in heavy industries with very low wages

- **WHEN**

2025 - It is an immediate need and will improve the standard of living in the coming years

- **HOW**

A multipurpose shuttle service that can carry at least 10 passengers in a controlled environment like heavy industries where road infrastructure is good.
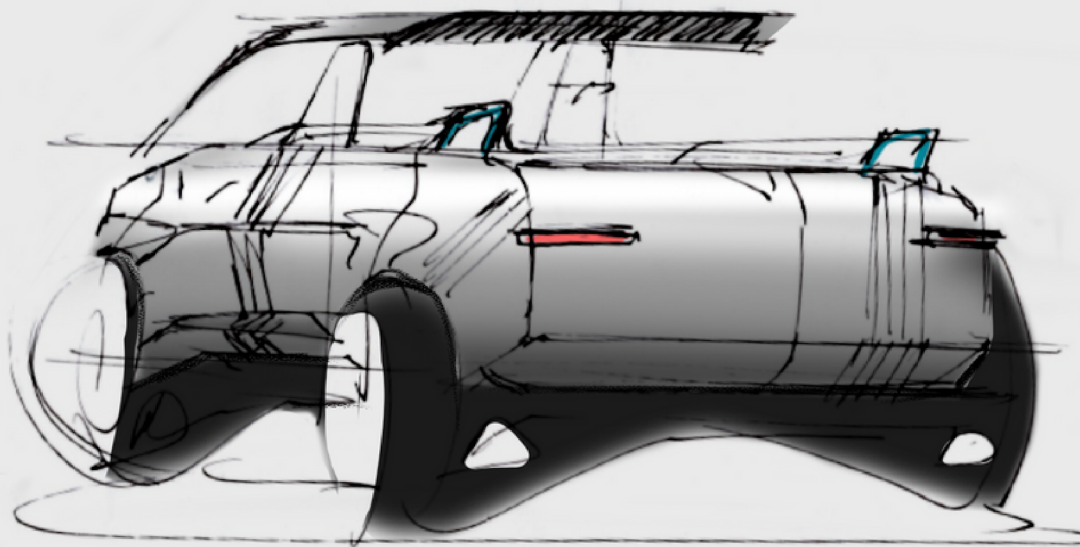
An electric multipurpose shuttle service that can carry 15 - 20 people in peak hours or cargo of at least 1 tonne during non-peak hours
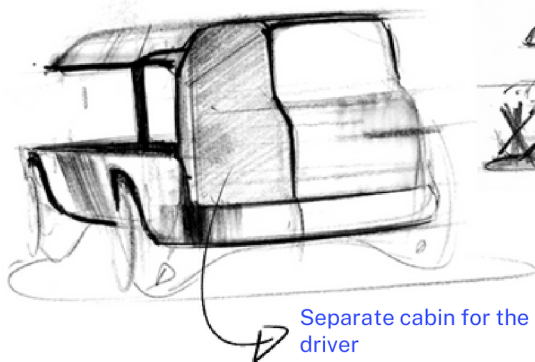
Solution 1 : Initial ideations
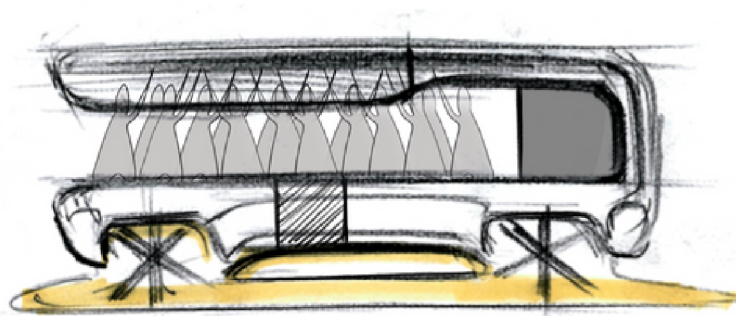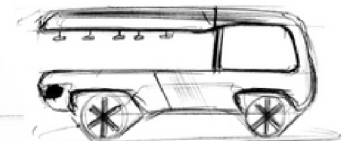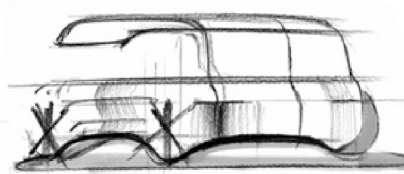
Long wheelbase - At peak hours, for people
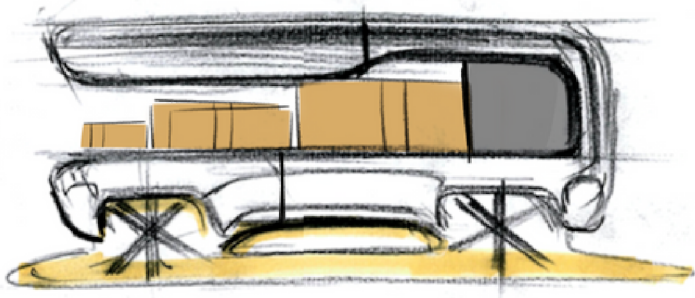
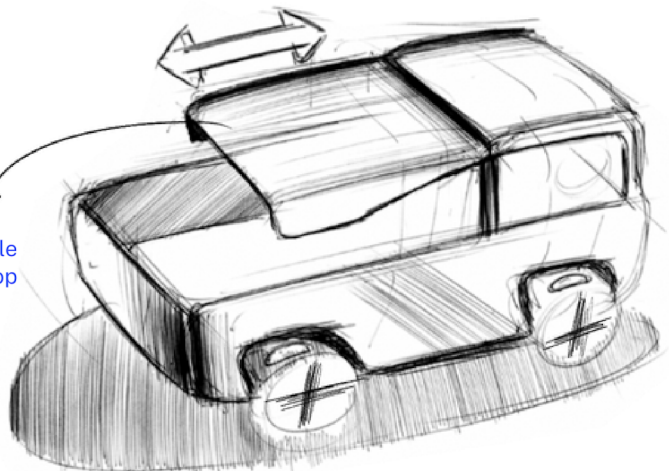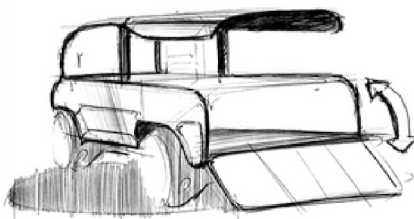Short wheelbase - Non-peak hours, for cargo

Short Wheelbase - 3800 x 1500 x 1845 mm
Long Wheelbase - 4500 x 1500 x 1845 mm
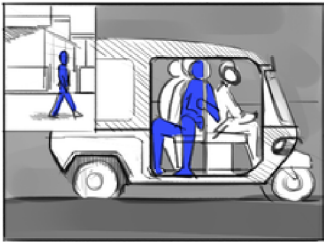

Separate cabin for the driver

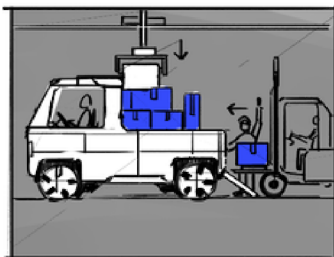Retractable soft top

User journey with proposed solution

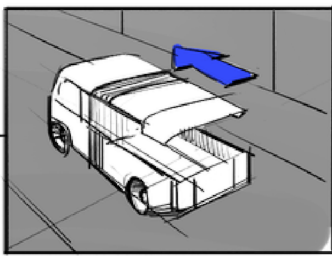People use multiple modes to travel

People reach to the entrance of Steel plant through auto/bus

People travel in the shuttle service which is in expanded state

Cargo loading through ramp and through crane on top

Shade retracting to make it a load carrying shuttle

Workers gets down at respective sites

Role of arrival in this direction

5-Year contract to Arrival's shuttle service
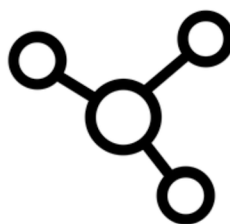

Training by Arrival to drivers

Service and maintenance hub by Arrival

Benefits to arrival in this direction
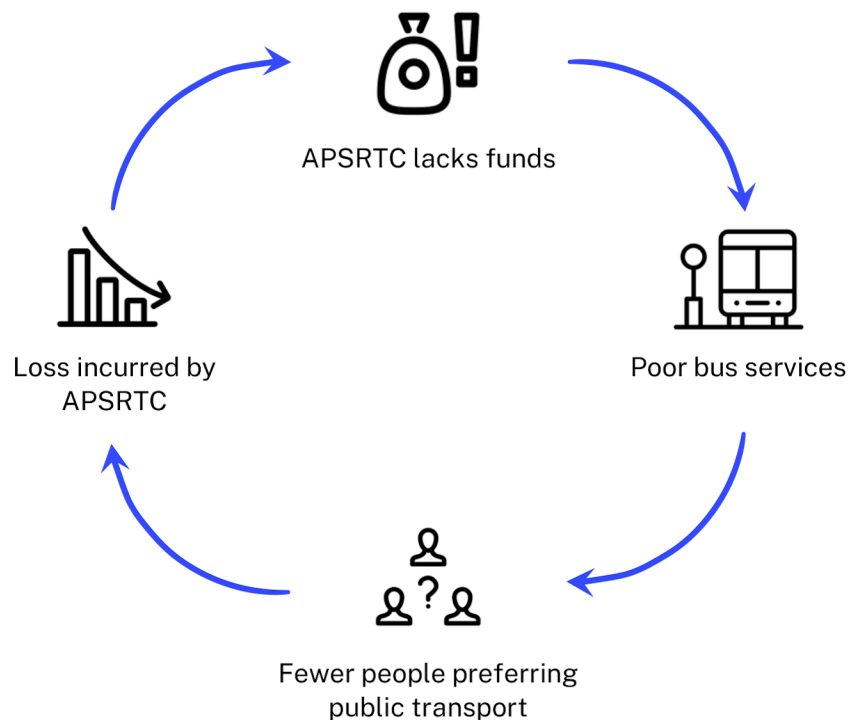

Opportunity at 100+ industries
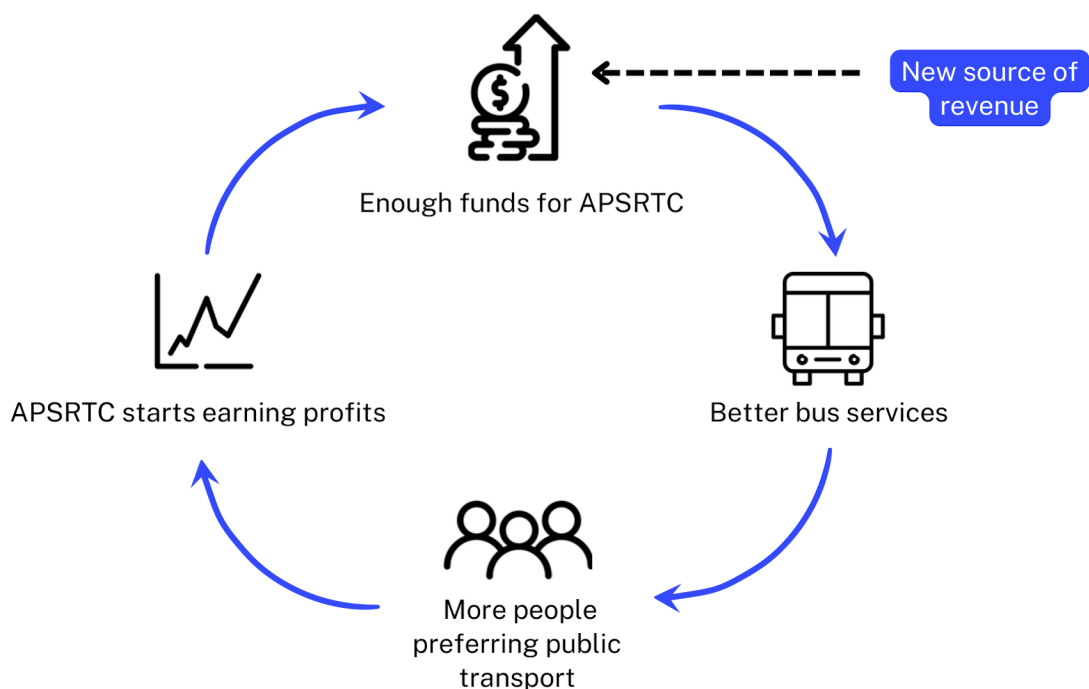

Connections to other partners

Easy to experiment in controlled spaces

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# Direction 2 - Existing state of public transport

Empowering public transport - wicked problem - public transport cannot offer good services unless they have funds but people won't use it unless they get good services
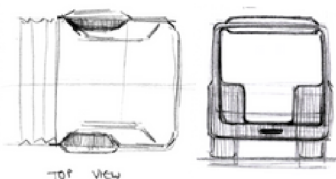

- To solve this problem we thought of providing an alternate source of revenue - APSRTC regional manager BEST example.
- An articulated bus with a rental module - transport not only as a means but an experience - module can be rented by business - fast food, vr experience center, attract a lot of tourists and youths and have an edge over others but we left it for another direction - Affordable integration - wanted to provide an affordable mobility option for people working in the industries
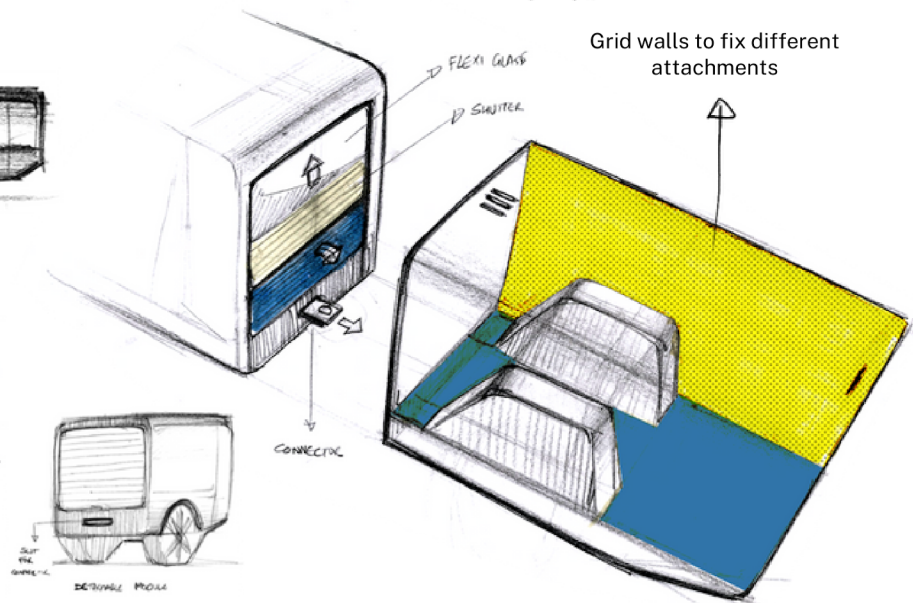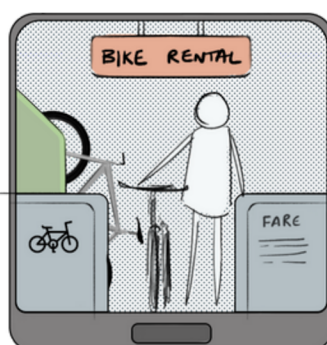
Solution 2: Initial ideations

Mode of Travel → Means of Experience

Bus Module + Rental Module
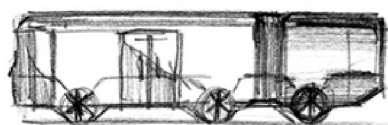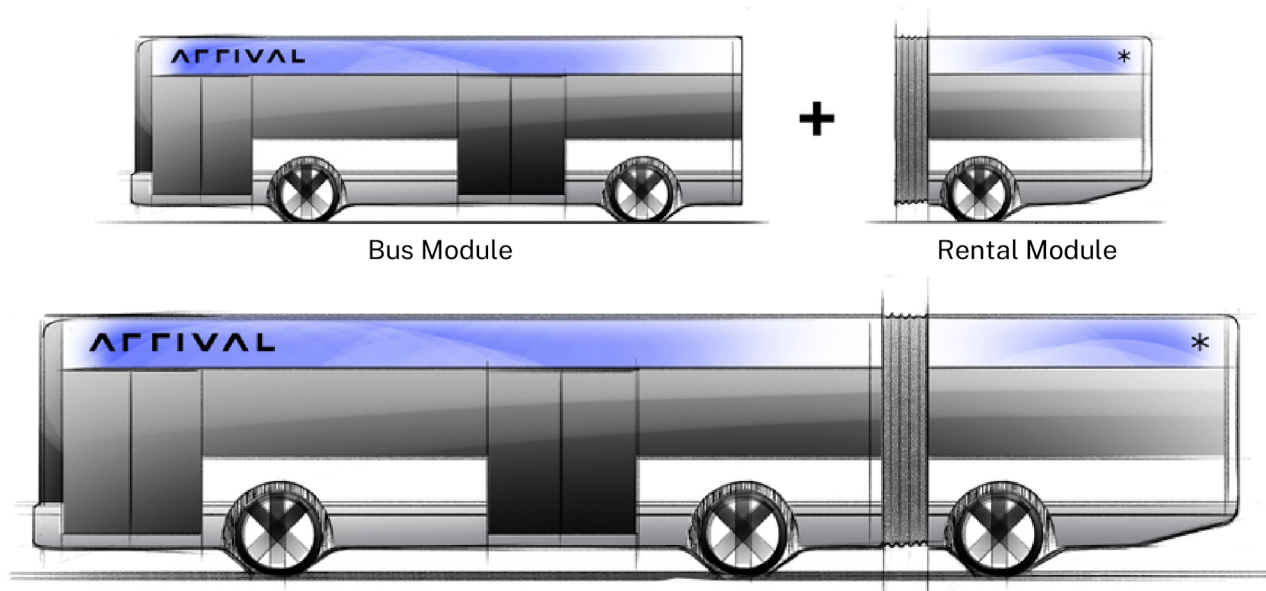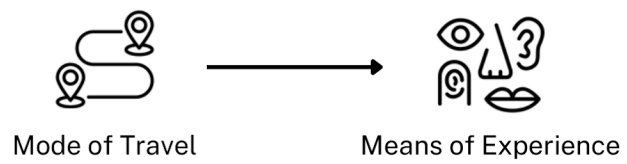
Dimension - 13.6 x 2.51 x 3 m
Passenger Capacity - 25 + 1

Grid walls to fix different attachments

Dimension -
4.42 x 2.51 x 3 m

Food and Beverages

Bike Rental

Rental module

Massage Machines
Logistic services
VR experience center

...and many more

User Group

Attracting Tourists

Ready to spend more money

Can wait a little longer
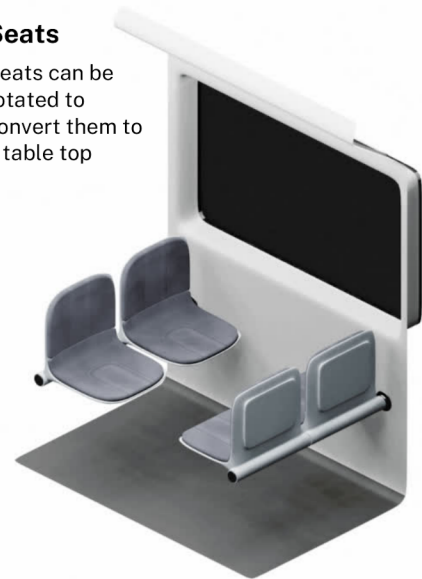
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Higher ticket fare
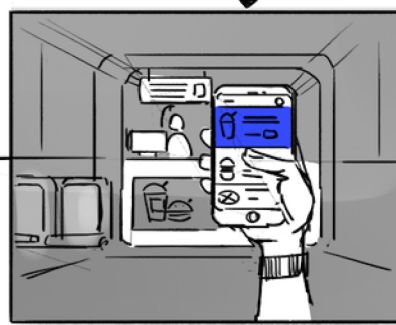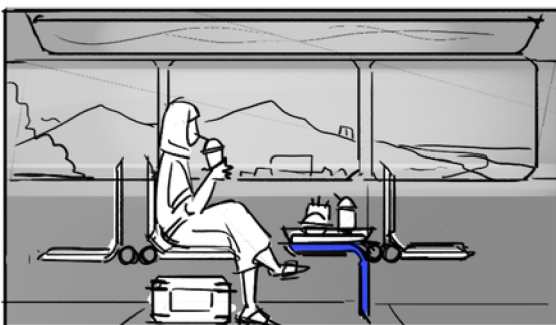
Low frequency of buses

Seats

Seats can be rotated to convert them to a table top

User journey with proposed solution

While paying for the ticket through scanner, they order the food on the same screen

User sees on the screen that his order has arrived

User flips the seat and eat comfortably while enjoying the hills

System model

APSRTC chooses the highest bidder with a suitable proposal

APSRTC floats tenders for the rental modules for different routes

APSRTC rents buses from Arrival

Businesses/Individuals give their propasal with a bid

Businesses set up their space in the module with yearly contracts