Integrated Parking System

Applied Design Strategy

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Source : Fig 1 : https://www.bmw.cc/en/all-models/bmw-i/i8/2014/pure-impulse.html

Agenda

1 ORGANISATIONAL SETUP

2 RESEARCH PHASE

3 PRODUCT STRATEGY

4 DESIGN STRATEGY

Organisational Setup

Source : Fig 2 : https://divisare.com/projects/303845-coop-himmelb-l-au-wolf-d-prix-partner-sergio-pirrone-oscar-ferrari-duccio-malagamba-musee-des-confluences#lg=1&slide=0

1. Team Members
2. Resources
3. Key Partners
4. Money Needed
5. Channels
6. Revenue Streams

ORGANISATIONAL SETUP

Team Members

ST DOE

MANAGEMENT

Manage the project plan, set the mile stones, facilitating, motivating, consistency management

SI DOE

MARKETING

Conduct a basic research on, latest technology, trend analysis, customer segment, user needs.

SA DOE

DESIGNER

Design the whole UX and detailed UI of app for both phone and and in-car system.

TA DOE

DEVELOPER

Write the program of the app and system.

TI DOE

ACCOUNTANT

Long-term business planning, break-even analysis, revenue stream, ROI analysis.

ORGANISATIONAL SETUP

Resources

EMPLOYEES

With a background in Management, Marketing Sales, Accounts, Design & development
etc,.

SOFTWARES

Which are capable of handling management tools, marketing tools, Sales, design & Development.

INFRASTRUCTURE

All physical assists which are needed to enable the employees to work properly.

ENGINEERS

With a background in engineering with capabilities to build sensors for the car & public.

ORGANISATIONAL SETUP

Key Partners

Car manufacturers who are willing to build in the application into their cars.

Could be a potential partner as they are developing solutions that connect cars via wifi.

Could be a potential partner (startup) as they could provide hardware solutions (sensors).

Government to authorise the use of digital parking systems in the city.

ORGANISATIONAL SETUP

Money Needed

€

110,000

MEDIUM MVP

€

83

APP STORE

€

200,000

EMPLOYEES

Source : http://www.comentum.com/mobile-app-development-cost.html | https://www.techradar.com/how-to/how-to-make-money-from-app-development

ORGANISATIONAL SETUP

Channels

AUTOMOBILE INDUSTRY

Software will be built in to the cars

APPLE STORE

App would be available to download for the phone

PLAY STORE

App would be available to download for the phone

ORGANISATIONAL SETUP

Revenue Streams

LICENSING

Sell the license to car manufacturers to build in the system we developed.

GOVERNMEMT

Government investment is necessary to install the sensors on the road.

ADVERTS

Gain advertise revenue through hosting ads

FREEMIUM

Basic function will be provided free of charge but need to pay for the additional premium features

Source : Fig 3 : https://insideevs.com/bmw-i8-is-worlds-1-selling-hybrid-sports-car/

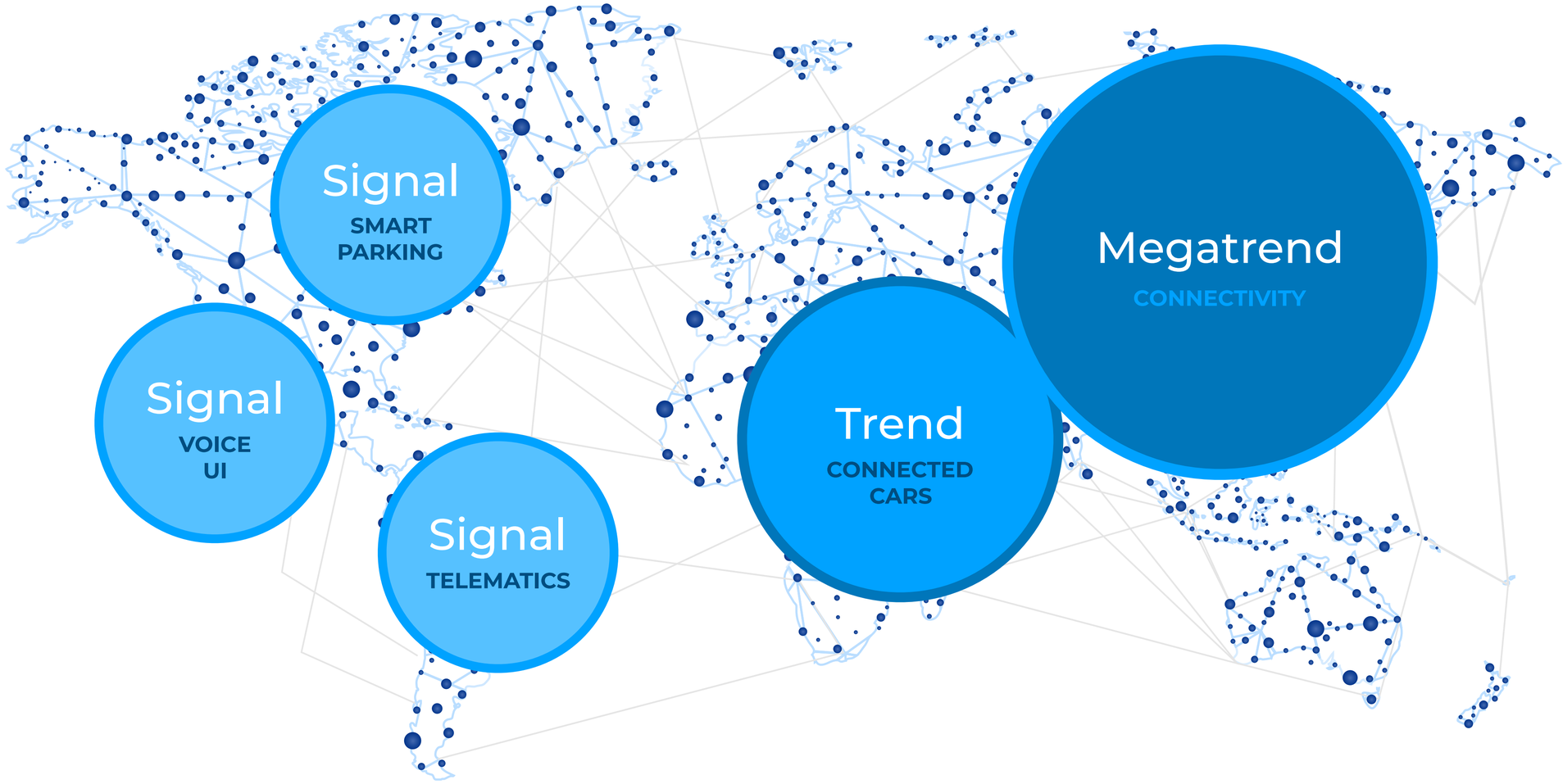
Research Phase

Source : Fig 4: https://www.google.com/search?client=safari&biw=1431&bih=911&tbm=isch&sa=1&ei=DQD2WqiCOYTL6ATyx7yIDw&q=people+in+bmw+factory&oq=people+in+bmw+factory&gs_l=img.3...453671.455473.0.455749.7.7.0.0.0.0.88.581.7.7.0....0...1c.1.64.img..0.0.0....0.MRV60CiwQpc#imgrc=2EjJouWlVtOJnM:

1. Trend Analysis
2. Market Analysis
3. Research
4. Use Cases
5. Experience Loop

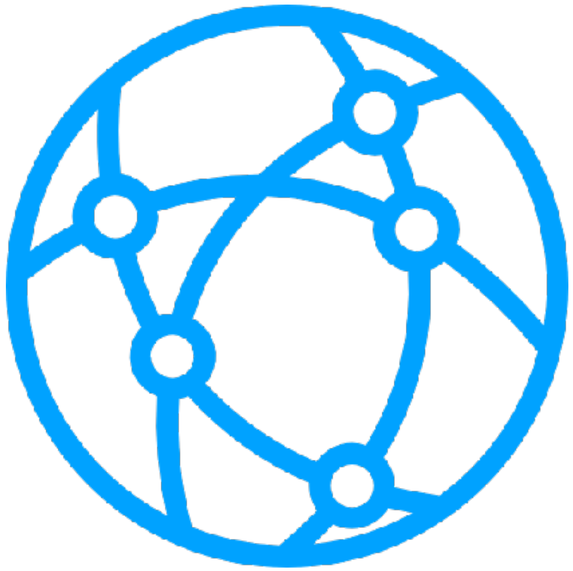
RESEARCH PHASE

Trend Analysis



RESEARCH PHASE

Trend Analysis



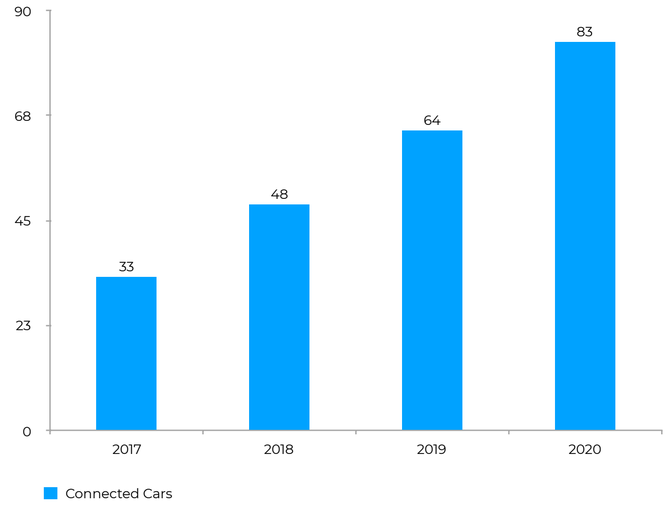
TREND

Connected Cars

35% Of cars are connected to the internet worldwide as of 2015

98% Of cars will be connected to the internet worldwide as of 2020.

83M Million units of connected cars are projected to be sold by 2020.



Source : https://www.statista.com/statistics/743400/estimated-connected-car-shipments-globally/ | https://www.statista.com/statistics/275849/number-of-vehicles-connected-to-the-internet/

RESEARCH PHASE

Trend Analysis

SIGNAL

Vehicle Telematics

36M Million US dollars is the expected rise in embedded car telematics sales in 2018.

103B Billion US dollars is the expected size of the global market in car telematics in the year 2022.

97% Reduction in speeding with the introduction of telematics.

“ We absolutely know **this is the future** and we want to get there first ”

Marcus Rothoff, Volvo

Source : https://www.statista.com/statistics/301129/global-sales-of-cars-with-embedded-telematics/ | https://www.statista.com/statistics/297873/telematics-market-size/ | https://www.ft.com/content/ca557812-c03a-11e5-9fdb-87b8d15baec2

RESEARCH PHASE

Trend Analysis

SIGNAL

Smart Parking

19B Billion US dollars is the expected to be generated by smart parking market in Europe in 2025.

30% Of French people said that they were delayed because of looking for a parking space in 2015.

15m The time spent by people to find a parking spot near their place of work in Europe in 2015.

Source : https://www.statista.com/statistics/622112/size-of-smart-parking-market-in-europe/https://www.statista.com/statistics/764597/difficulty-find-a-square-of-car-park-time-lost-europe-la-france/ | https://www.statista.com/statistics/767709/minutes-find-a-square-of-car-park-place-of-job-europe/

RESEARCH PHASE

Trend Analysis

SIGNAL

Voice UI

55%

Of cars are estimated to be equipped with voice recognition software by 2019.

Ex

Alexa, adjust the temperature to 75 degrees.

Siri, find the phone number for a plumber in Ashford.

“ Make sure it’s easier than the alternative. **If it’s not more convenient for users to do it with voice**, then you shouldn’t pursue it”

Daniel Padgett, Conversation Design Lead for Google Assistant

Source : https://www.statista.com/statistics/261685/voice-recognition-in-new-cars/ | https://willowtreeapps.com/ideas/google-i-o-2017-voice-ui-and-connected-cars
https://www.globalme.net/blog/the-present-and-future-of-in-car-speech-recognition

RESEARCH PHASE

Market Analysis

Ballast Nedam

SIEMENS
Ingenuity for life

Cleverciti Systems

BEMOBILE

SPOT HERO

SMART PARKING
ALSO TRADING AS TOWN AND CITY PARKING

Parkbob

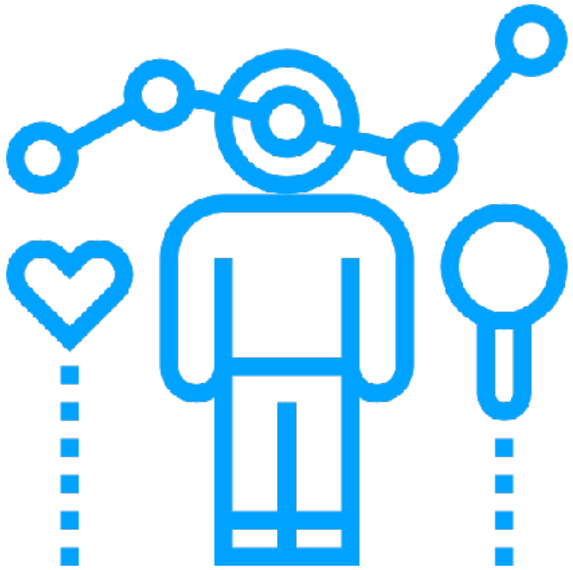
1.46B

Billion dollars is the estimated growth and business opportunities in the smart parking market by 2025.

Source : https://www.prnewswire.com/news-releases/global-smart-parking-market-analysis--trends-2017-2025---146-bn-growth-opportunitiesinvestment-opportunities-300527620.html

RESEARCH PHASE

Research



Q Do you use a parking garage or search for parking spaces on the street?

A **Both !!**

Q How often do you search for a parking spot?

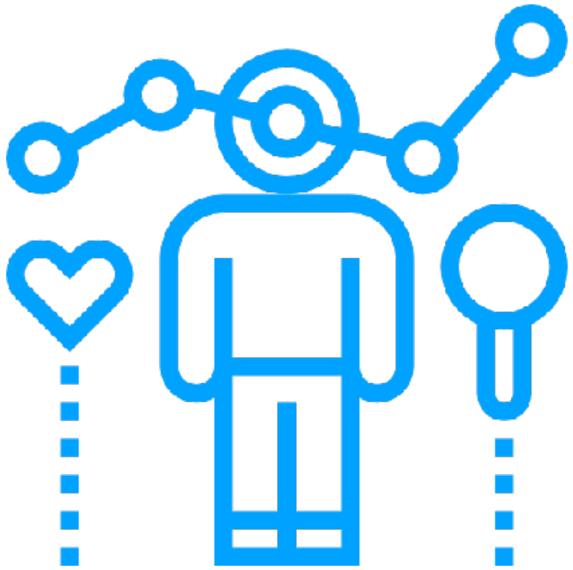
A **Everyday !!**

Q How long does it often take you to find a parking spot?

A **10 Minutes !!**

RESEARCH PHASE

Research



Q Do you use a smartphone to help you navigate?

A **Yes !!**

Q Does using a smartphone distract you while driving?

A **Barely !!**

Q Do you have a voice interface in your car?

A **No !!**

RESEARCH PHASE

Use Case

Jane Doe

Profession
College Student

Goal
Focus on the street rather than searching for a parking space

Driving Ability
Begineer

Frustration
Not being able to focus on the street while searching for a parking space

Time
Depending on work load at the University

Technology
Used to technology

Mentality
Adaptable

Motivation
Safe the environment

"I am looking for a solution to reduce stress while I am driving."

RESEARCH PHASE

Use Case

John Doe

Profession
Business Man

Goal
Wants to reduce time while driving
And parking

Driving Ability
Expert

Frustration
Taking too long to find a parking spot

Time
Works a lot - time is essential

Technology
Used to technology

Mentality
Efficient

Motivation
Finding a parking space quickly

"I want to optimise the time spent during the parking process."

RESEARCH PHASE

Use Case

Bane Doe

Profession
Pensioner

Driving Ability
Expert

Time
Has sufficient time

Mentality
Pragmatic

Goal
Wants a more convenient way of Parking

Frustration
Not being able to find a parking space close to the destination

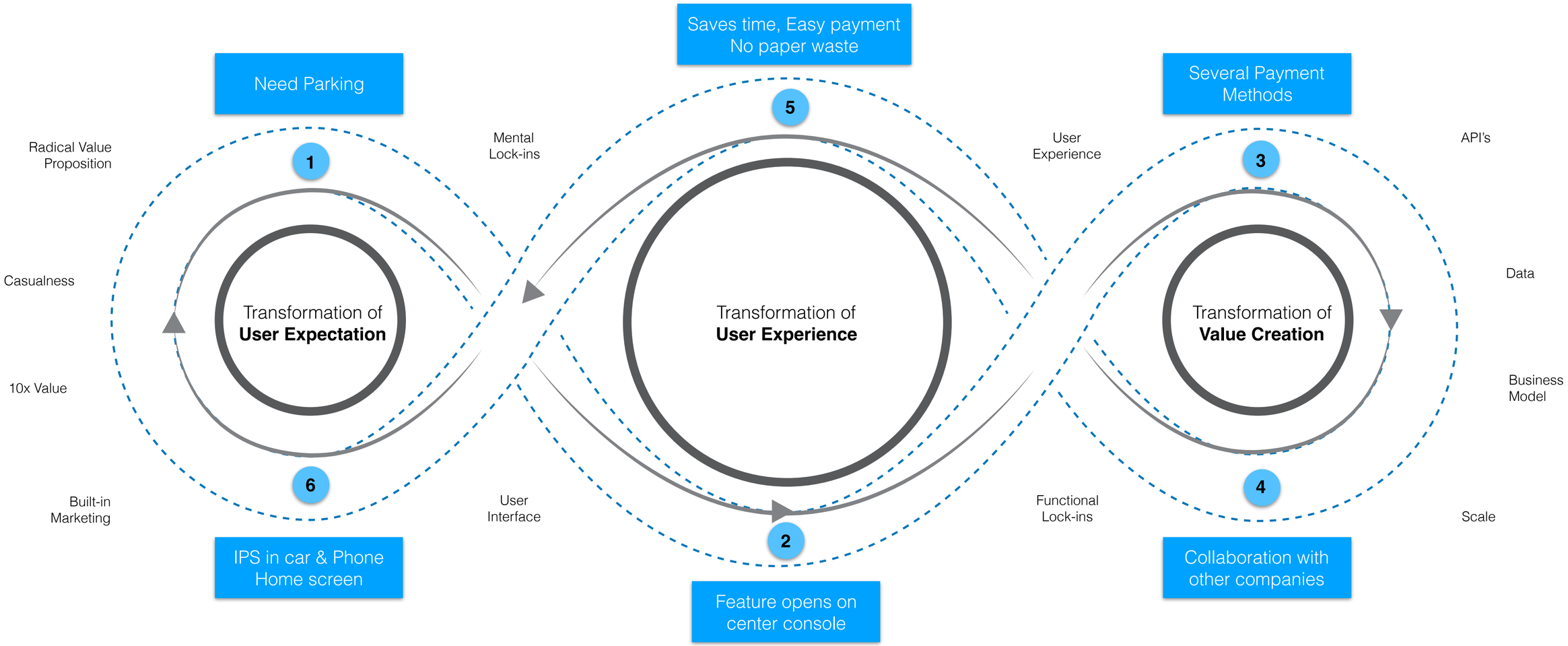
Technology
Not really used to technology and hence needs a easy to use software

Motivation
Finding the closest parking space

"I feel like there is a more convenient way of parking."

RESEARCH PHASE

Experience Loop



Source : Fig 5 : https://wallpapersite.com/automotive/cars/bmw-i8-black-4k-8665.html

Product Strategy

Source : Fig 6. http://chainimage.com/image/bmw-i8-sport-car-interior-wallpaper-hd

1. Value Proposition
2. Strategic Pillars
3. User Problems
4. Goals
5. User Solutions

PRODUCT STRATEGY

Value Proposition

Proposition

Product

Integrated Parking System

Gain Creators

Safety
Money
Convenience

Pain Relievers

Voice UI
Online purchase
Online extension
Parking slot tracking system

Customers

Customer Job

Easily find parking spot

Gains

No coins
No loss of tickets
No parking fines
No spending time on machine

Pains

Losing ticket
Not having coins
Time waste, stress
Walking distances
Finding ticket machine

PRODUCT STRATEGY

Strategic Pillars

Choice of strategy

Starting with the the problem, the three questions that were considered are

How should the design / strategy be expressed?
What is the level of agreement?
What is the level of clarity?

PRODUCT STRATEGY

Strategic Pillars

Choice of strategy

How should the design be expressed?

Design as *Making* Things

What is the level of agreement?

Unified *Pov*

What is the level of clarity?

High *Clarity*

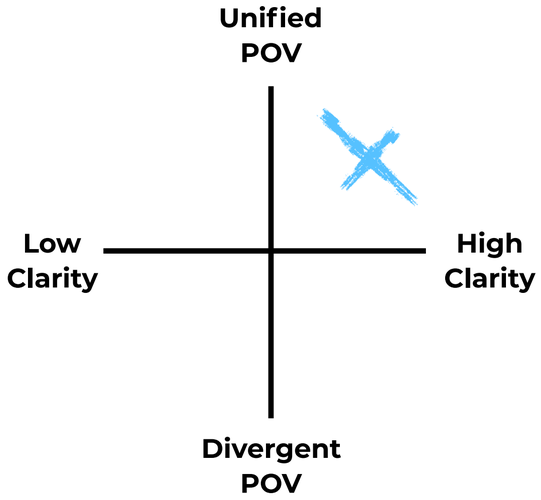
PRODUCT STRATEGY

Strategic Pillars

Choice of strategy

Since everyone in the team agreed on the problem and the desired solution traditional design practices were considered to move forward.

Since design practices were considered bringing the concept to life using Graphic design, UI were used.

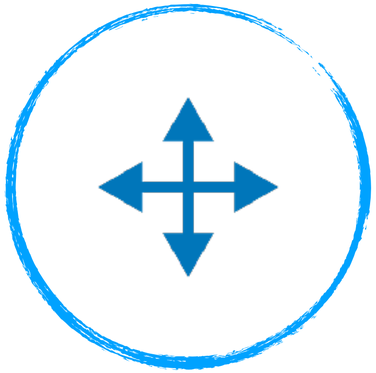


Create *Desirability*

PRODUCT STRATEGY

Strategic Pillars

Google Design Sprint

1	2	3	4	5
				
Understand	**Diverge**	**Decide**	**Prototype**	**Validate**

PRODUCT STRATEGY

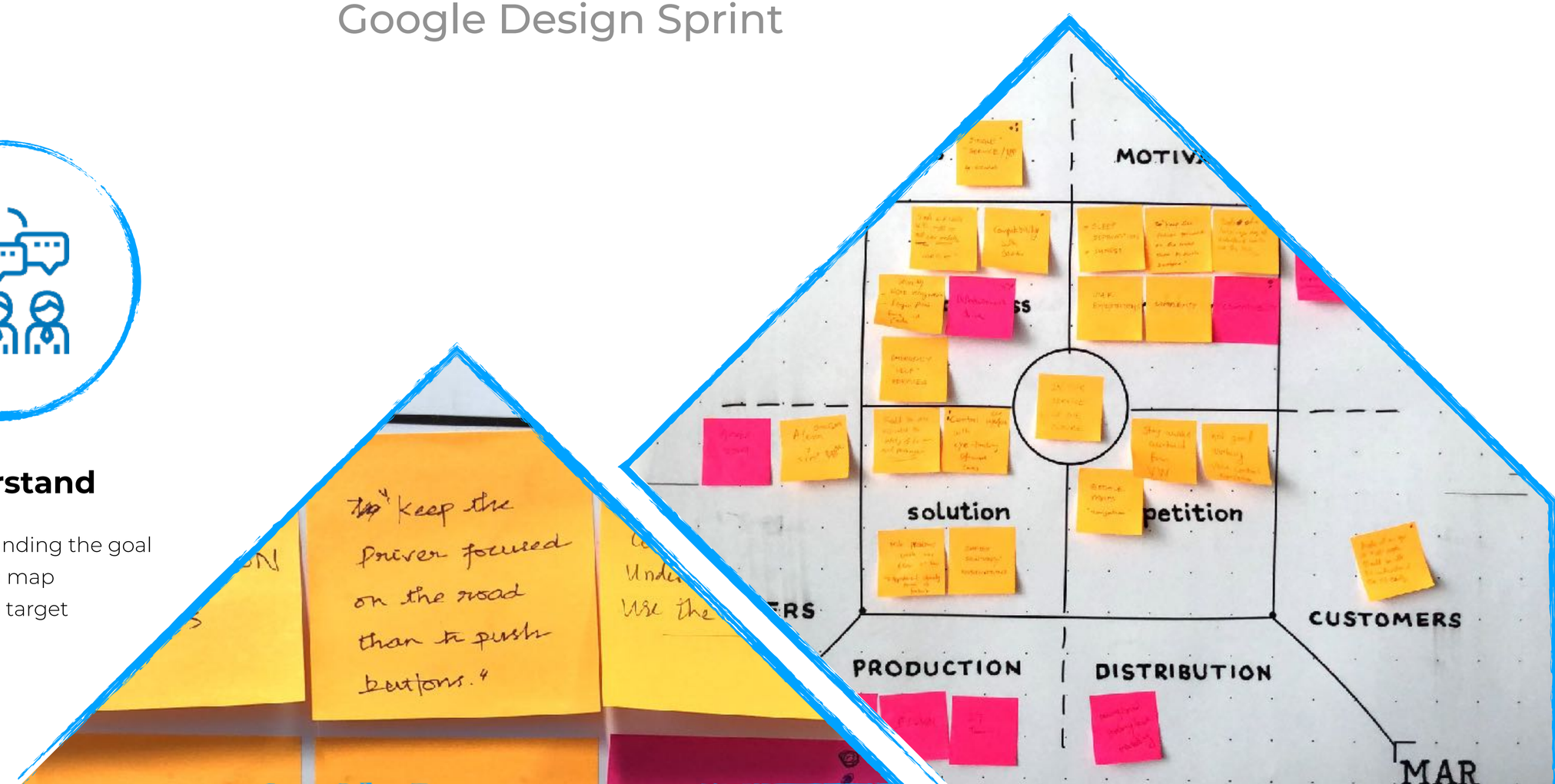
Strategic Pillars

Google Design Sprint

1

Understand

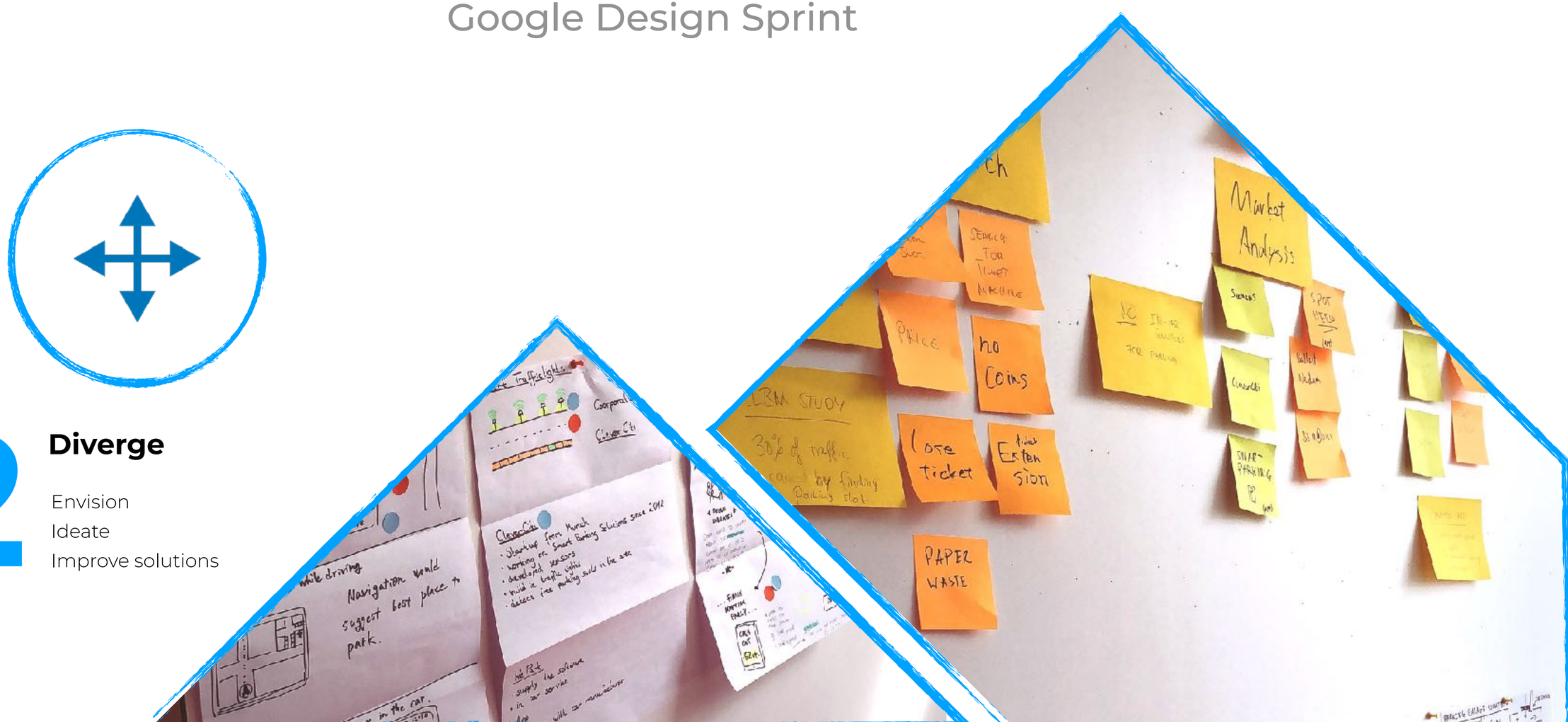
Understanding the goal
Making a map
Picking a target



PRODUCT STRATEGY

Strategic Pillars

Google Design Sprint



2 **Diverge**

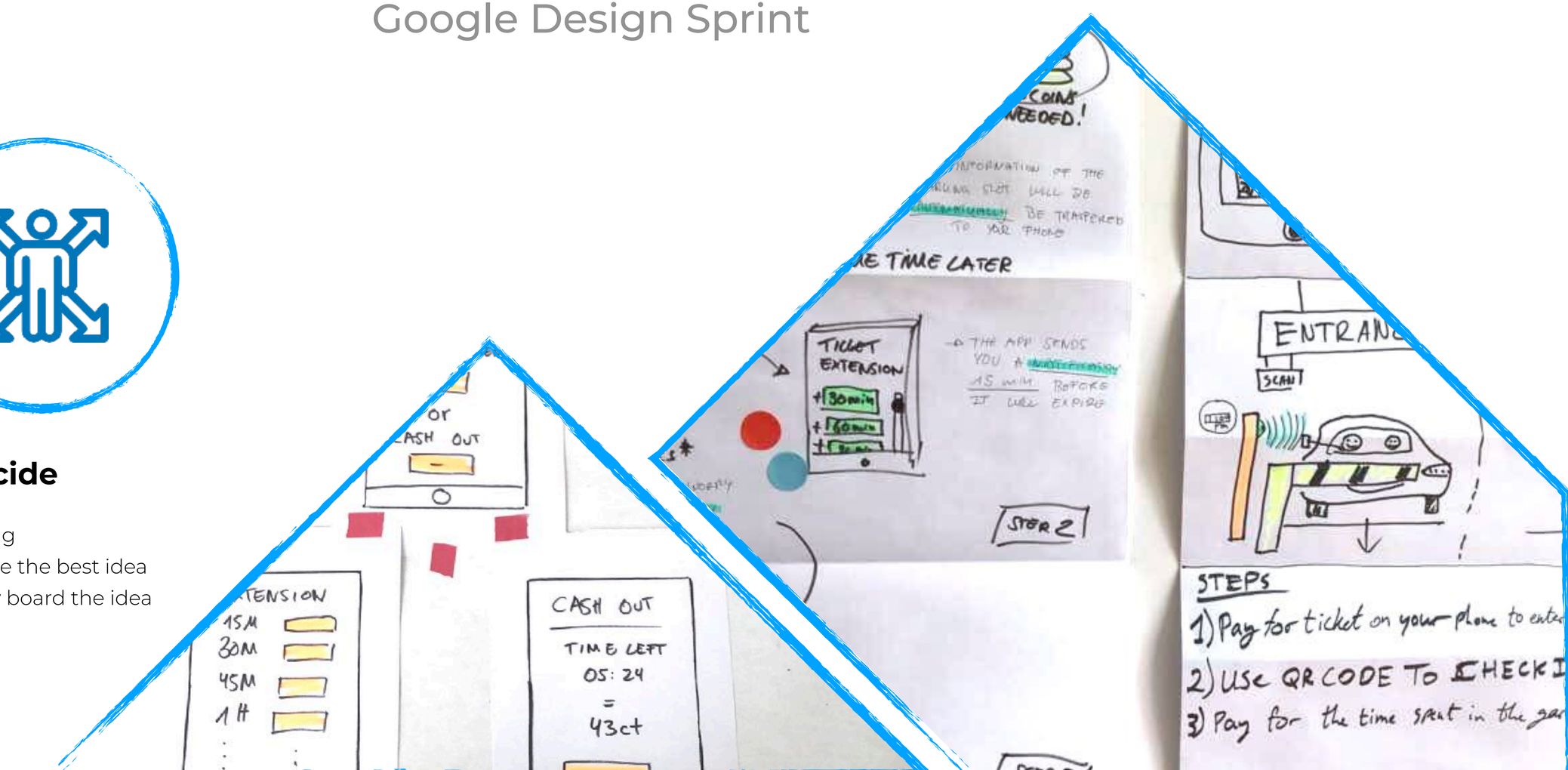
Envision
Ideate
Improve solutions

Strategic Pillars

Google Design Sprint

3 **Decide**

Voting
Chose the best idea
Story board the idea



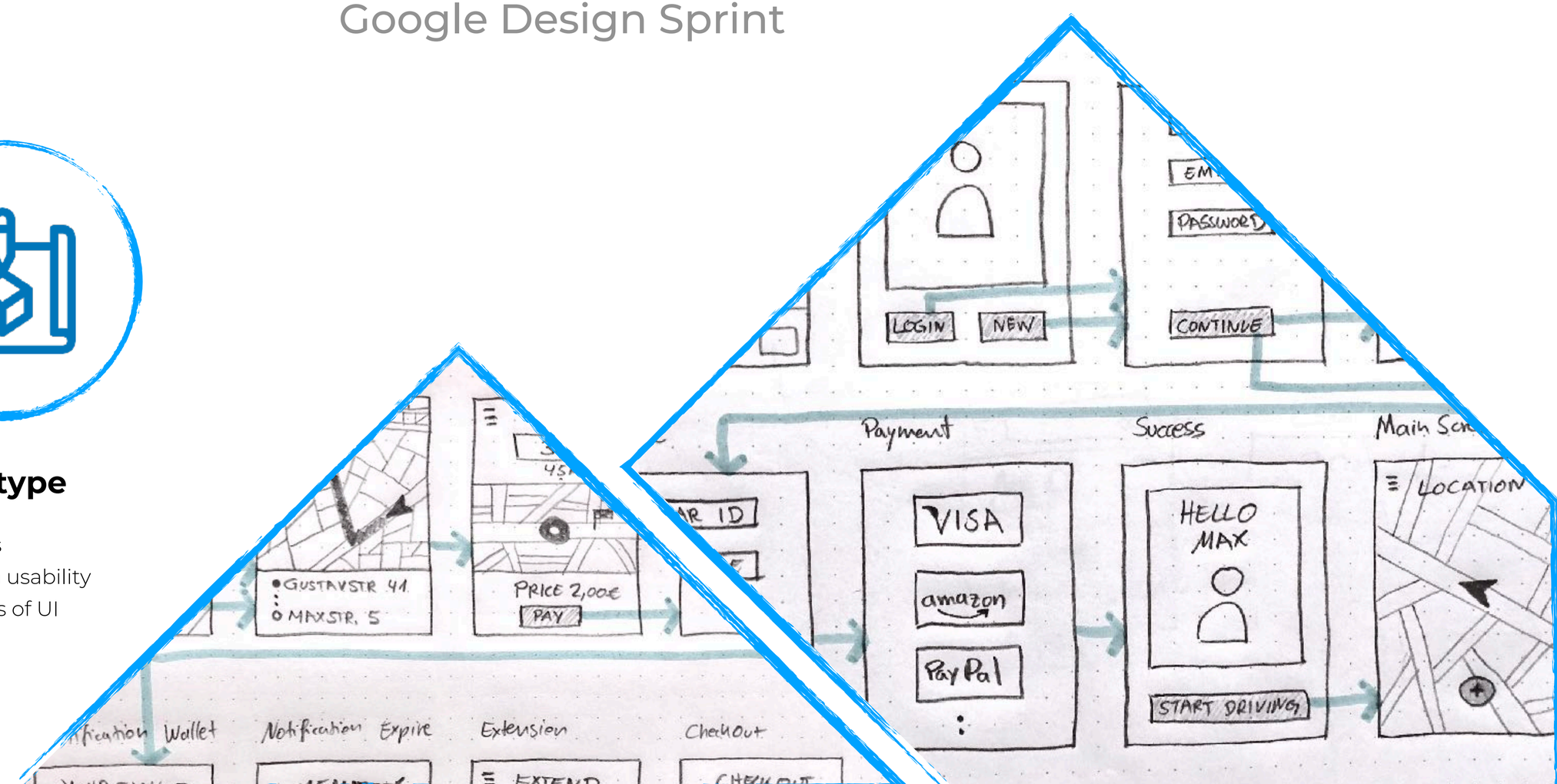
Strategic Pillars

Google Design Sprint

4

Prototype

Mockups
Focus on usability
Drawings of UI



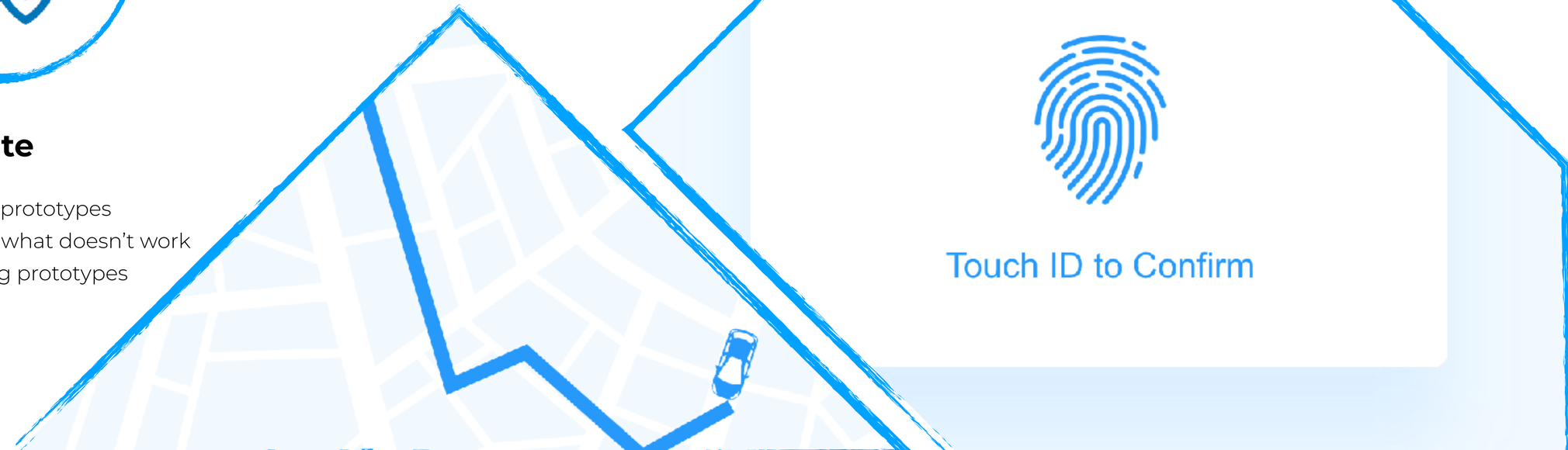
PRODUCT STRATEGY

Strategic Pillars

Google Design Sprint

5 **Validate**

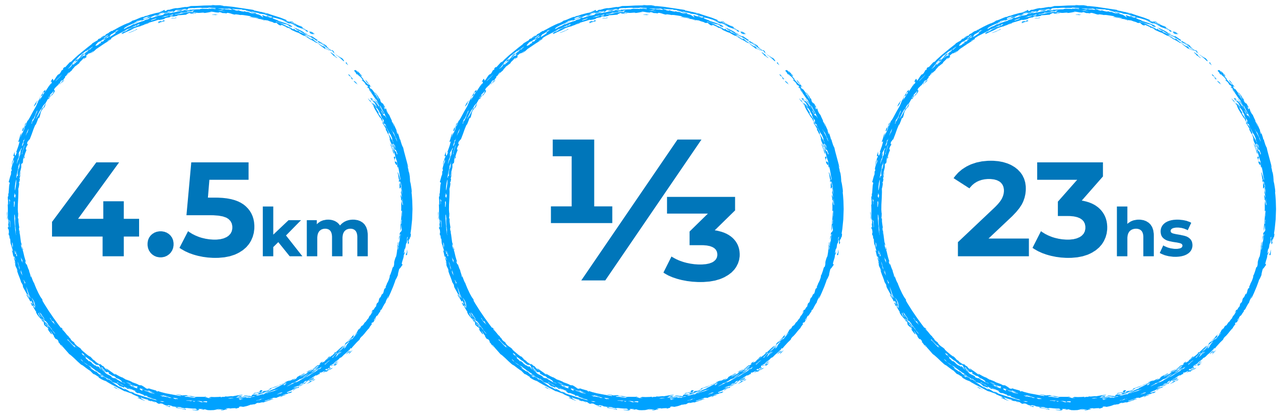
Showing prototypes
Learning what doesn't work
Improving prototypes



PRODUCT STRATEGY

User Problems

“ Finding a parking spot is **stressful and time consuming**. ”



Extra Kms that drivers have to travel on an average to find a parking spot

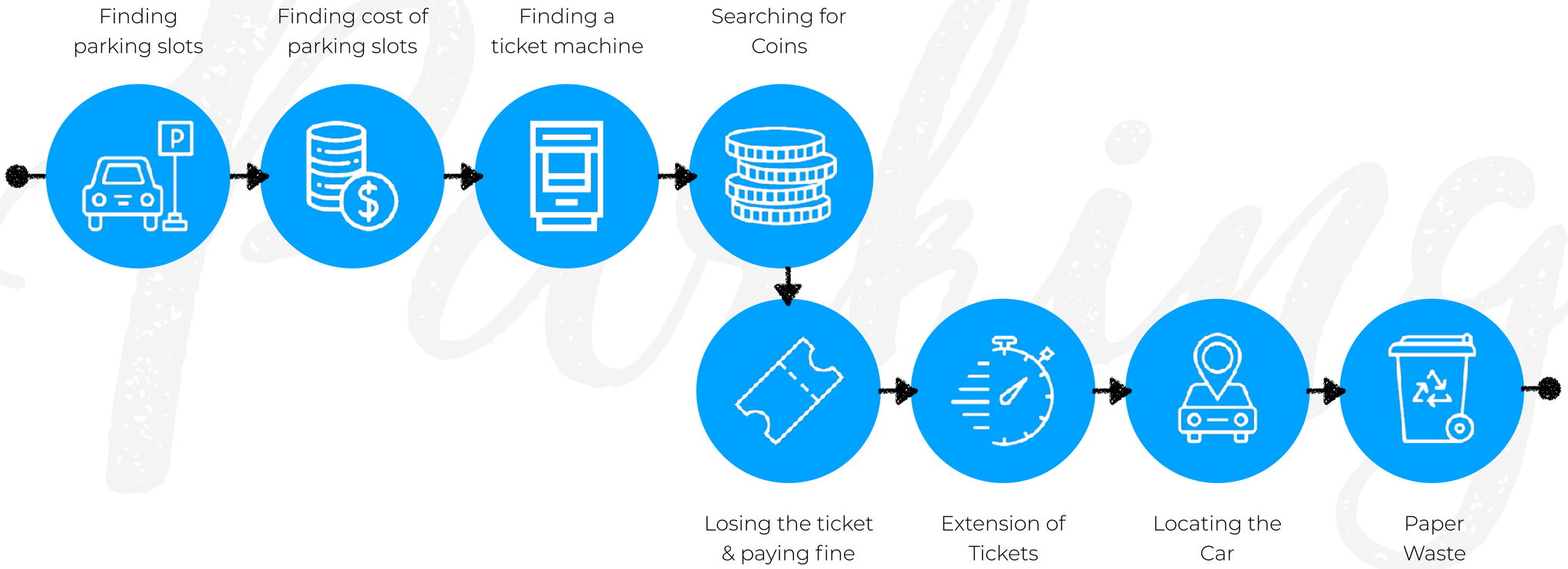
Inner city traffic is caused by drivers looking for parking

A day cars are parked on an average making parking Spots hard to find

Source : https://www.siemens.com/content/dam/webassetpool/mam/tag-siemens-com/smdb/mobility/road/parking-solutions/integrated-smart-parking/documents/siemens-smart-parking-infographic-en.pdf

PRODUCT STRATEGY

User Problems



PRODUCT STRATEGY

Goals

“ To make the parking process **simpler and less stressful for daily drivers**. ”

-43%

Less time spent looking for parking

-30%

Less parking related Vehicle miles traveled

-8%

Less traffic volume when Increasing parking availability

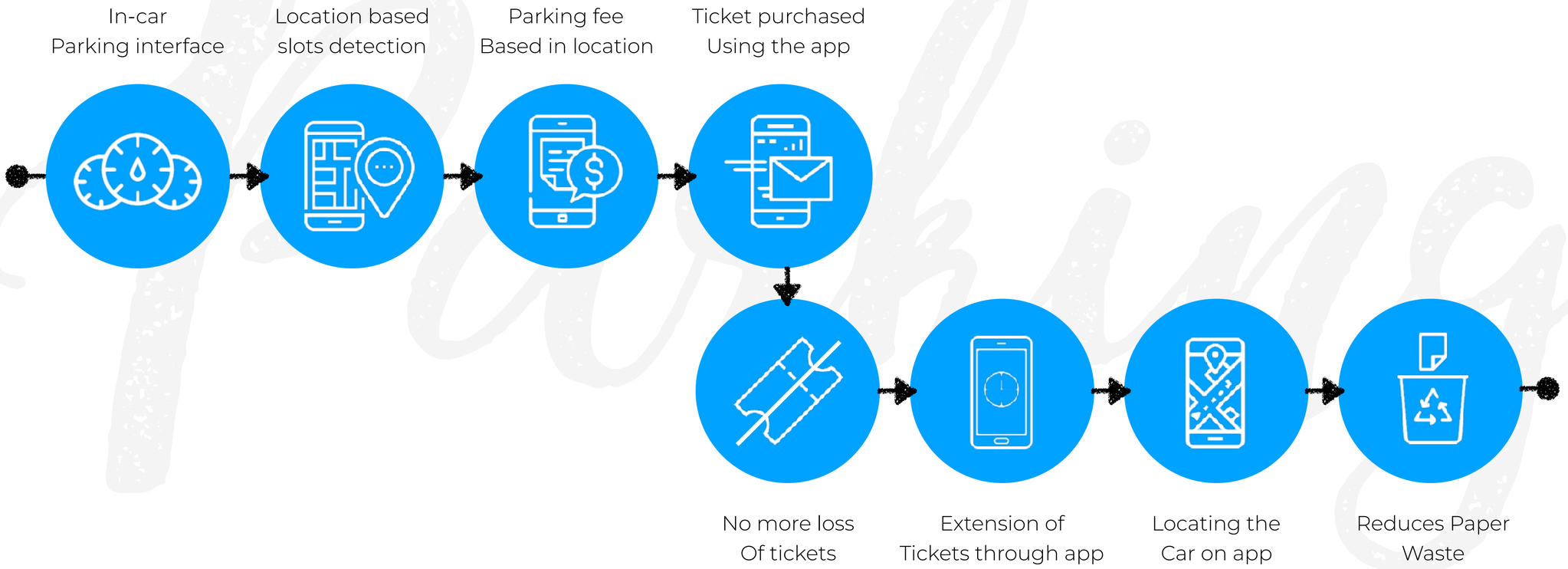
-CO_2

Reduce greenhouse gas Emissions accordingly

Source : https://www.siemens.com/content/dam/webassetpool/mam/tag-siemens-com/smdb/mobility/road/parking-solutions/integrated-smart-parking/documents/siemens-smart-parking-infographic-en.pdf

PRODUCT STRATEGY

User Solutions



Source : Fig 7 : https://www.bimmertoday.de/2016/11/11/bmw-i8-mehr-fotos-aus-abu-dhabi-zeigen-individual-lacke/

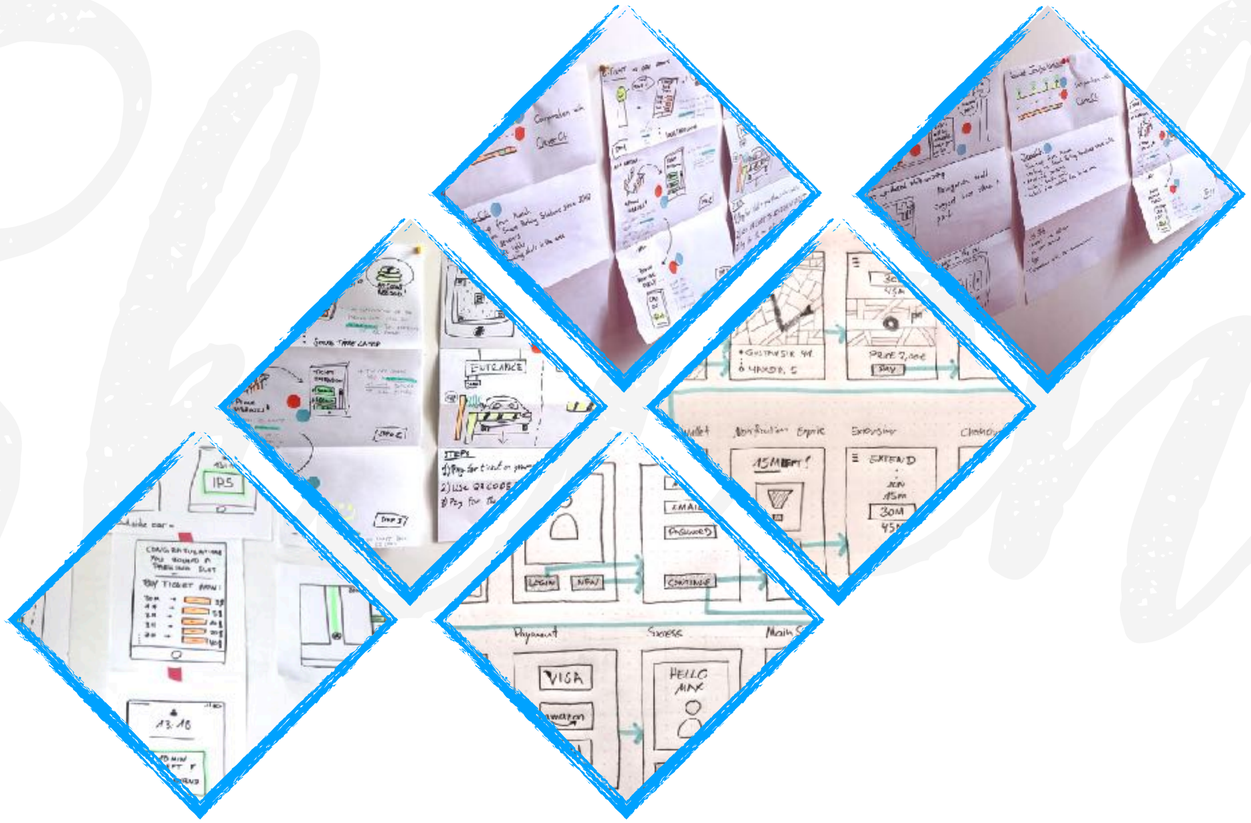
Design Strategy

Source : Fig 8: https://www.bmw.co.za/en/all-models/bmw-i/i8/2014/imagesvideos.html

1. Tangible Results
2. Wireframes
3. Prototype
4. Clickable dummy

DESIGN STRATEGY

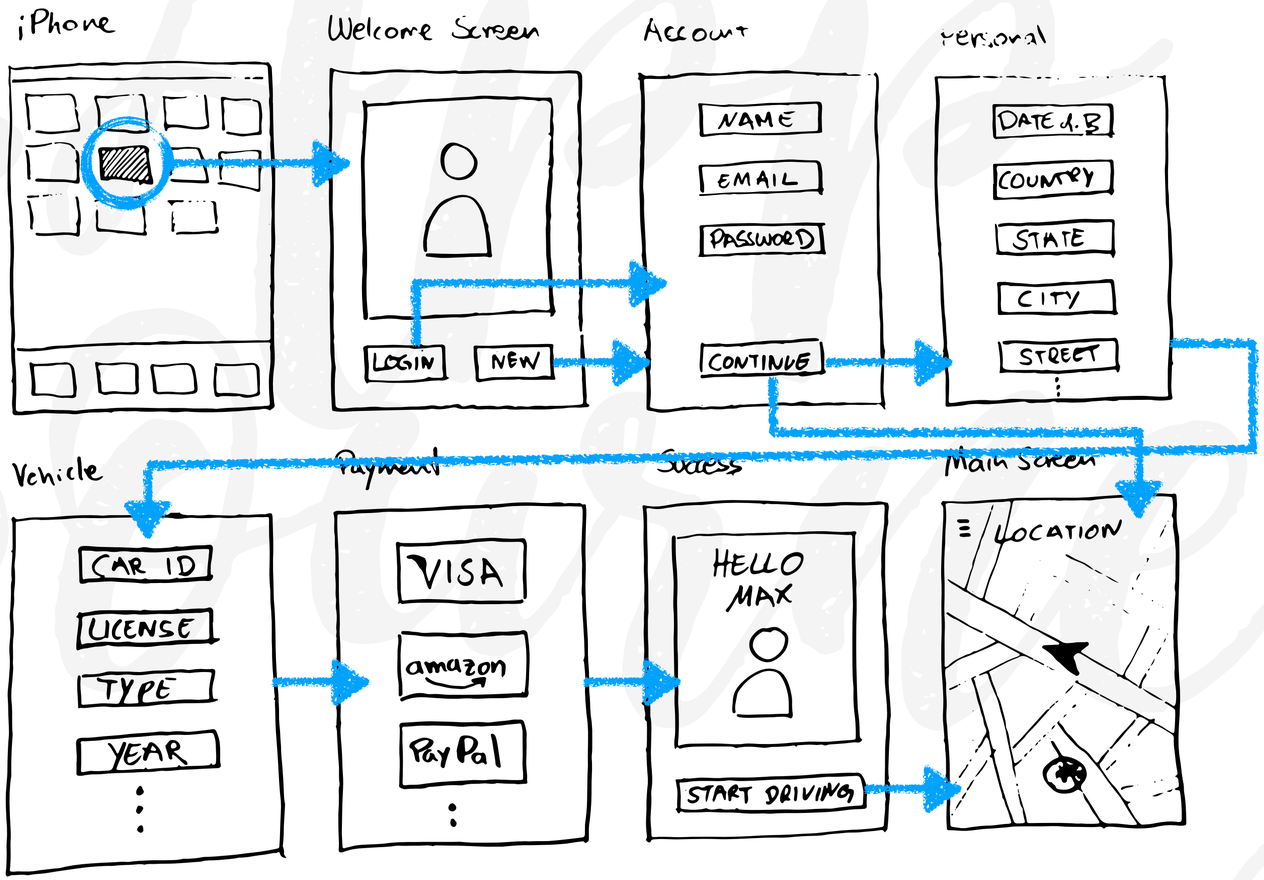
Tangible Results



Initial Sketches - customer journey | UI Elements | wireframes

DESIGN STRATEGY

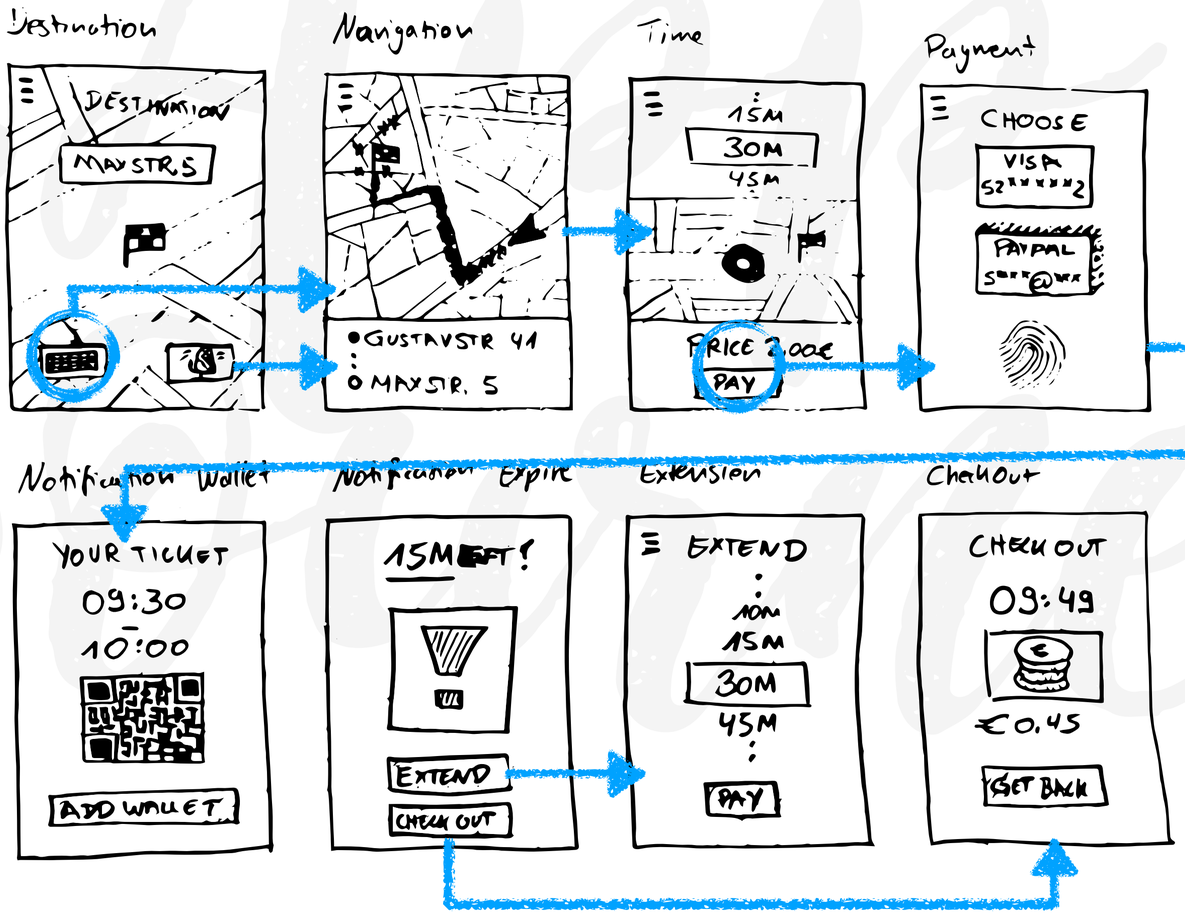
Wireframes



Initial wireframes - UI Elements | customer journey

DESIGN STRATEGY

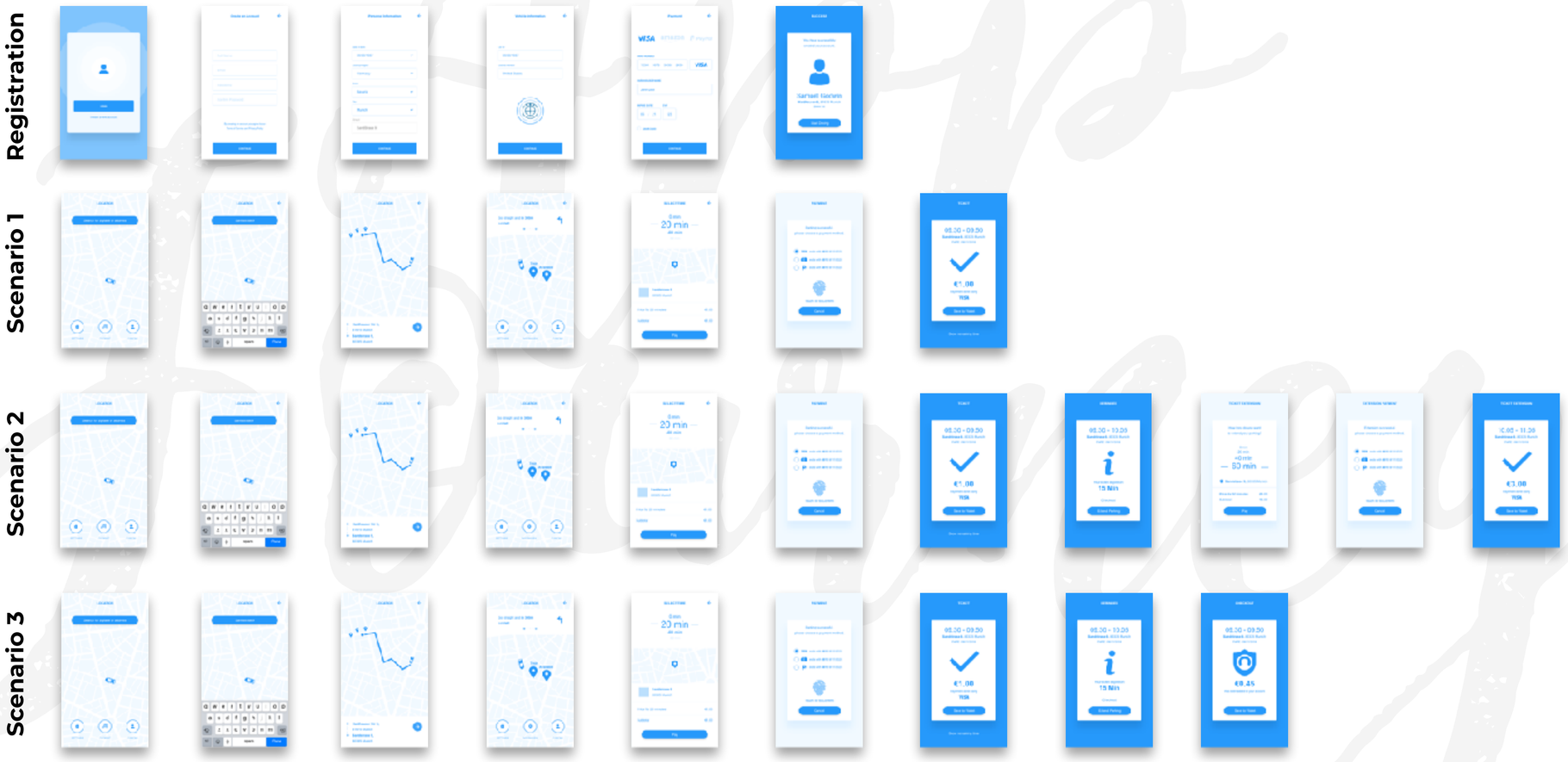
Wireframes



Initial wireframes - UI Elements | customer journey

DESIGN STRATEGY

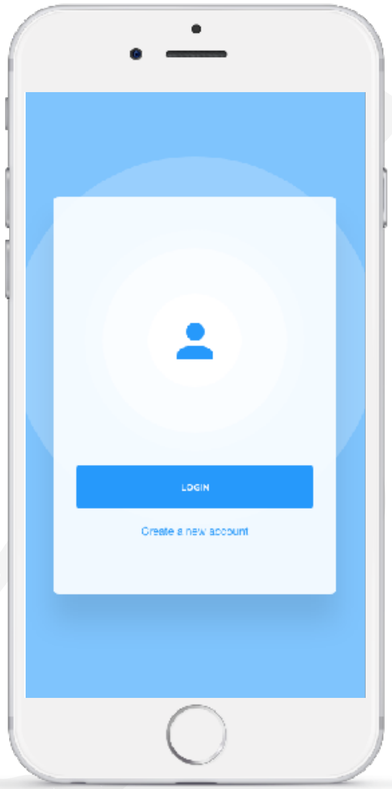
Prototype



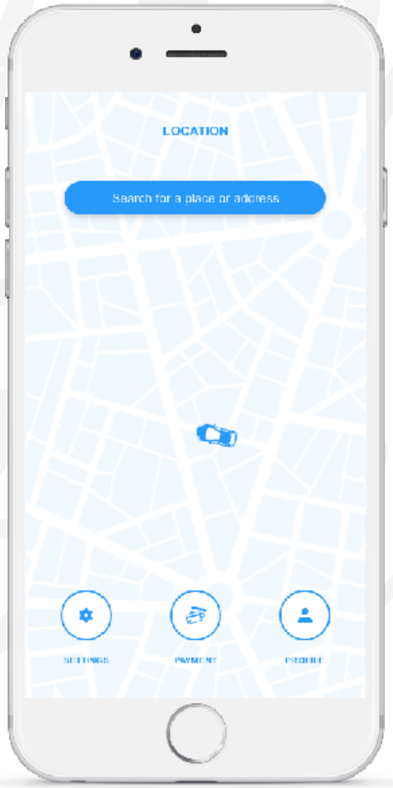
Prototype - App Screens

DESIGN STRATEGY

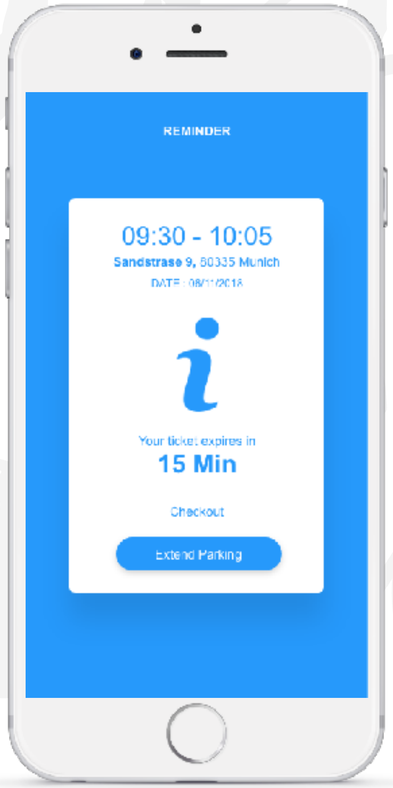
Prototype



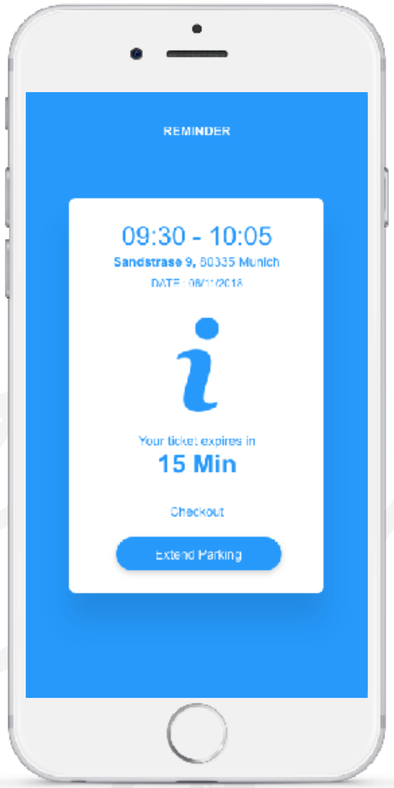
Registration



Scenario 1



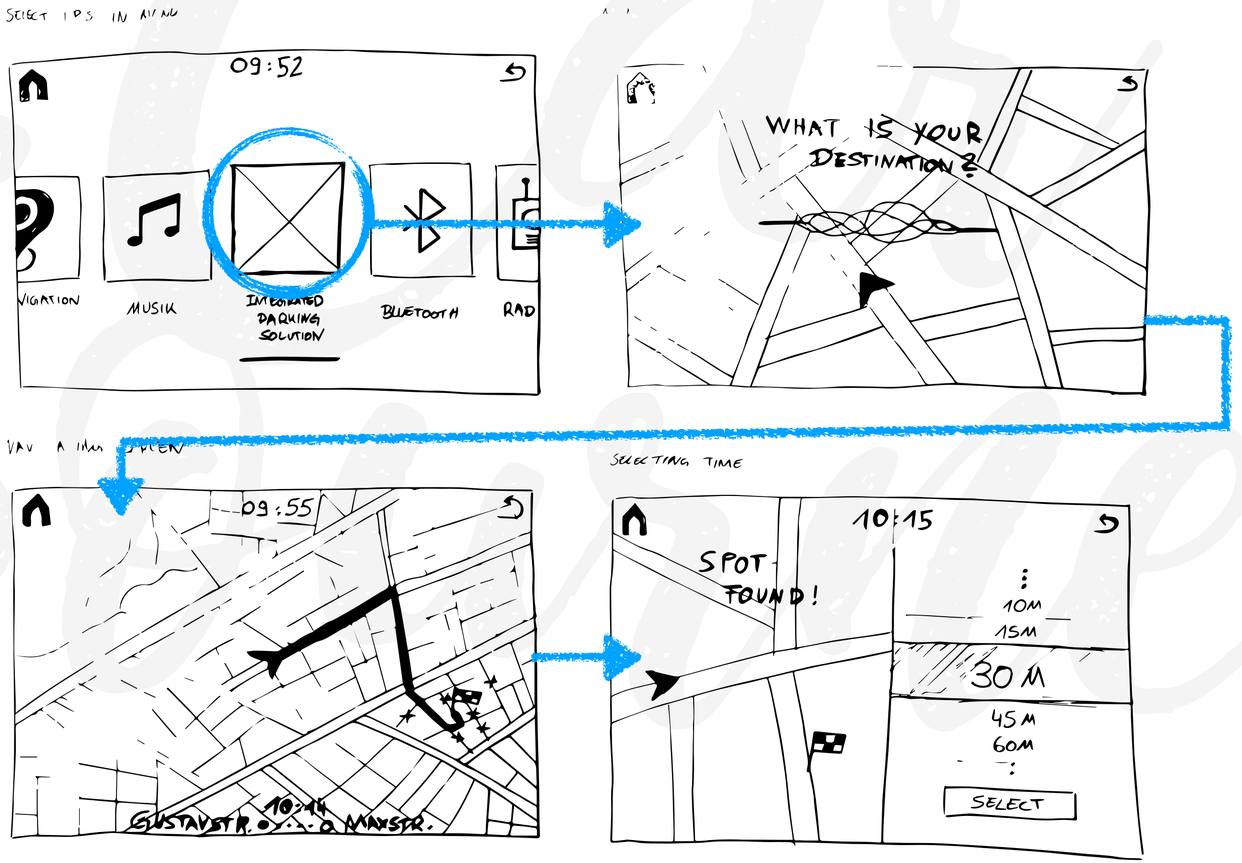
Scenario 2



Scenario 3

DESIGN STRATEGY

Wireframes



Initial wireframes - UI Elements | customer journey

DESIGN STRATEGY

Prototype

Prototype - car screens

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Ciao