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Departure

Full car

Allocated parking

Match time

Happy hour

User experience

Event visitors in the area

Johan preparing for departure looking for public transport options to the dealership

Arriving at BMW dealership in the area meeting 3 other fans. car is full

receiving parking advice underway based on origin and parking availability

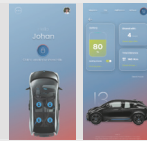On time for pre match activities

suggestion to stay longer

Staying for post match activities

Returning to BMW dealership

Communication
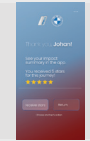
Mockup app for BMW (Selfmade)

Full electric car because of car sharing. shows carpoolers profiles (Selfmade)

Interface in car leading you to the most efficient parking (Selfmade)

Notification from on advise to stay longer to skip the congestion after event

The people in the car have now learned how to travel to lower their impact in an efficient way (Selfmade)

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PILOT PROPOSAL BMW

Product
Living Lab
2024

Diemen
Muiden

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Amstel

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Arena

INTRODUCTION

The ArenAPoort area in Amsterdam South-East is the main event area of the Netherlands. Next to that people are living, shopping, and working in the area, in fact this share is projected to increase significantly by 2040. During the simultaneous events that can take place, public transport and car infrastructure reach its peak capacity. Congestion causes environmental impact and nuisance in the area and therefore has a negative impact on the liveability of the area.

The role of the car in an urban environment becomes uncertain when looking at policies in many Dutch cities. Nevertheless, this pilot aims to see the car as a part of the solution. Where most policies focus on new forms of mobility and tend to neglect the cars that remain, it is also very valuable to look at what we can achieve by making current car use as efficient as possible.

This pilot aims to promote efficient car use within the ArenAPoort area by offering a carpooling service through BMW dealerships. The many dealerships that spread throughout the Netherlands can be used as hubs for carpooling. Visitors can pick up an electric car through the BMW app and make their commute to the event. During this ride they are being educated about sustainable and efficient driving behaviour through BMW's iDrive system. The shared ride itself also enhances the liveability and traffic flows in the area by decreasing the number of cars and by offering a clean alternative.

Demos such as coordinated parking based on origin-destination data and shifting travel times to and from the area through incentives provided via the BMW app and interface are key outcomes of the research conducted. These findings, detailed in the report, highlight that such features can be seamlessly implemented, particularly in BMW-owned vehicles.

Carsharing through BMW dealerships allows visitors at Johan Cruijff ArenA (JCA) to experience new electric BMW-models, while promoting carpooling as a more sustainable transportation solution. The vehicles used in this pilot will serve a broader purpose: to educate and encourage efficient, desirable driver behavior during events, while also providing useable data to the Operational Mobility Center (OMC) of the ArenAPoort.

This way, the fleet of electric vehicles serves as an educational platform for visitors of the ArenAPoort area. The BMW app and iDrive system could assist them for example with smart navigating, in car purchases and reservations. These nudges will aid in influencing driver behaviour by improving traffic flows and thus the environment and the liveability of the area in the future.

Target audience and survey
The projected target audience for this pilot is visitors attending events or matches at Johan Cruijff Arena (JCA) by car. The community of football fans serves as a scale model of society; it brings individuals from diverse socio-economic backgrounds together. This environment offers a unique opportunity to engage a broad audience and make them more aware of sustainable practices. To verify which target group within this bigger group is most appropriate, BMW should conduct surveys to gather insights on data about what specifically needs to be included in this carpooling concept to satisfy the user.

Geographic scalability
The solutions and insights of the pilot can be adjusted and applied to other event areas, even internationally, with high peak demand. Next to that, city wide deployment could also be a viable solution for high traffic areas such as city centres.

Adaptability to different use cases
Beyond event management, the tested features and lessons learned from this pilot can be applied to different use cases such as everyday commutes. Coordinated parking and shifting travel times can improve accessibility in a wider range of settings.

Technical scalability
Techniques tested through this pilot can be commercialised and integrated into the current car systems.

Economic and policy alignment
The project's outcomes, improved accessibility, reduced congestion and enhancing sustainability, align with broader urban policy goals. With proven success this can provide funding and broader stakeholder engagement.

OBJECTIVE

SCALABILITY

IMPL EMEN TATI ON PLAN

1. Preparation phase

Define area and scenarios: analyse the most important traffic flows, parking zones and event hotspots in the assigned area for the pilot, in this case ArenAPoort.

Stakeholder engagement and establishing of partnerships: collaborate with ArenAPoort stakeholders. Make agreements with various stakeholders, such as the municipality, parking operators, event organisers, and nearby businesses to ensure alignment and cooperation. This is, for example, needed to facilitate assigned parking locations and arrange incentives to shift travel times.

Technical setup: develop a platform that can process data, such as a cloud infrastructure and user interfaces for analytics and reporting. If this is well designed, the pilot will be easier to scale up in the future.

Data integration: make agreements with BMW's existing connected (private) vehicles to collect necessary data (e.g. real-time location, parking availability, congestion).

2. Implementation

Data collection and processing: equip the fleet of cars that will be used for carpooling, with the car sensing technologies needed, so that they collect data during real-time conditions.

Behavioural nudges: Use BMW's iDrive system to communicate personalised suggested actions to drivers. This can also be done beforehand through the BMW app. Think of efficient parking options, alternative routes, reminders to pre-book parking or stay longer after the event.

Testing user experience: Monitor responses to notifications through the BMW app or iDrive system

3. Feedback and iteration

Collect stakeholder feedback: after gathering insights from drivers, local businesses and the JCA, identify challenges and adjust to additional needs

Adjust designed system: adjust user interface design, message format, communication means based on feedback from use data

Expand pilot scope: If successful, scaling the system to other event areas or replicating the pilot at other urban dense locations can be considered.

4. Data analysis

Assess driver's behaviour: Analyse if drivers followed suggested routes or parking advice. Optimize by changing the formulation of messages and position on the interface etc.

Analyse parking efficiency: Assess if there were improvements in parking efficiency by looking at time taken to find parking and evaluate parking occupancy for the area.

Evaluate impact on traffic flow: If the scale of carpooling is significant, one can compare congestion metrics before and after.

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Traffic flow efficiency; Reduction in travel time, reduction in congestion, and increased speeds on key routes.

Parking efficiency; Parking occupancy rates, reduction in the search time for parking.

Environmental impact; reduction in CO_2 emissions, reduction in nuisance by vehicles

User engagement and compliance: user satisfaction (survey), BMW carpool usage rates

Economic and operational impact: event accessibility improvement, cost effectiveness for stakeholders (parking management, local businesses)