Problem:

Park house nowadays need to be re-innovated to fit the extra need for electric cars.

Several new features can be addressed with IOT technologies:

- Light sensor and wind sensor are used to monitor renewable energy generation for charging of the electric cars or feeding the energy back to the grid.
- Parked cars or park house which are equipped with batteries can be used as electricity storages to decide when to charge cars and when to sell electricity back to the grid depending on the real-time electricity price (Supply-Demand).
- Car parkers get real time update when the charger stops charging (Battery full) and have the option to rent out their cars as batteries for storing electricity.
- Motion sensors are used to monitor availabilities of parking spaces and update to the drivers’ phones/cars

Benefits:

- Better parking experience while promoting electric cars.
- Drivers can get compensation for renting out their car as batteries.
- Park house get compensated by selling extra electricity. (Electricity price varies throughout the day)
Persona

Cheng
The SAPer

“I love cars, and I think electric cars are the future. Yet I have doubts whether I should really get one. “

About

- 27, single, working for almost 2 years.
- Planning to buy a car in the next coming year
- Currently goes to work every day with his 10-year-old second hand VW-Golf (20 mins single trip) and drives from Heidelberg to Hamburg (5 hours) from time to time to visit his friends.
- Working as a software developer, loves his cat.

Responsibilities

- I am responsible for the maintenance and development of a software component.
- I spend most of my time in the office, debugging and drinking coffee.
- I drive to work every day around 8:30 and go home after 17:00

Needs

- Every morning I need to find a parking space that is close to my building.
- I need the cost of electric cars to be lower to be able to afford one.
- I need to charge my car if I decides to get an electrical car.

Main Goals

- I wish to contribute to the protection of the environment, if I was faced with a choice.
- Wish it could be easier finding a parking space in the morning
- Save some money.

Pain Points

- Every day, it takes five minutes to drive around to find a parking space.
- Some parking spaces available are reserved for electric cars only and they remain empty, for the whole day.
- Getting an electric car can be expensive at the moment.
As an IT company, I need a way to combine the Parkhouse with renewable energy so that more employees could afford and choose to buy electrical cars.
## UX Journey

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>Start the car in the morning</th>
<th>Driving</th>
<th>Parking</th>
<th>Parked</th>
<th>Going to park house</th>
<th>left</th>
</tr>
</thead>
</table>
| MINDSET             | “I hope the traffic is not so bad”  
“I wonder if it rains today” | “Which park house has space for me to park?”  
“Do they have chargers there?”  
“I wonder if the chargers are working” | “Should I drive to the end of this line or should I continue to search on the next floor” | “Maybe I am only allowed to park here until my car is fully charged” | “I wonder if my car is fully charged” | “What a day but finally it is over” |
| FEELING             | 😊                           |         |         |        |                     |      |
| TOUCH POINTS        | Car display                  | Car display  
Cell phone  
Signs in front of the park house | Lighting sign above every parking space (Green – Free, Red – occupied)  
Electric charger display | Computer at work (e-mail, skype)  
Cell-phone  
Light sensor at park house  
Wind speed sensor at park house | Cell-phone  
Car key | Car display  
Signs in front of the park house |
Prototype

https://standard.build.me/prototype-editors/api/public/v1/snapshots/116118bd8bb7a0870e1ebf78/artifacts/latest/index.html#/launch_page
Solar Panel 1 - Park House 3

LIVE TEMPERATURE
15.0°C
Feb 17, 2017 00:00:00

Notifications (4)
- The Solar Panel is running at a high temp
- July 15, 2017
- July 15, 2017
- See All

Outputting Electricity (KWh)

Operating Temperature (°C)

Sun Light Intensity