SmartDrive Inc.

Development and Demonstration of "EV Mobility Data Platform" to Promote the Spread of Electric Vehicles in Selangor, Malaysia

Object of the project

This project aims to pinpoint the challenges encountered by electric vehicle (EV) users in Malaysia and to determine the specific business opportunities within the EV ecosystem. More precisely, the project aims to uncover the disparities between the experiences of EV users and the availability of charging infrastructure. Via simulations, the project seeks to identify the gap between the supply and demand for EV charging and strategic locations for installing new charging stations.

Cooperation with Local Companies/Governments

In this project, we cooperated with DreamEdge Sdn. Bhd., a leading engineering company, which provided support in conducting preliminary research on the EV user perspectives. With their assistance and specialized knowledge, we were able to explore the demand side of the gap and gather valuable data and insights to inform our work. Our joint efforts were aimed at gaining a comprehensive understanding of the EV user experience in Malaysia.

Targeted Economic/Social Issues

The state of Selangor in Malaysia has a population of 6.5 million people, and the number of private cars in the state is approximately 7 million. This suggests that private cars are the primary mode of transportation in the state, and the utilization rate of public transportation is low. The per capita carbon dioxide (CO2) emissions in Selangor are high, standing at 7.27 tons per year, which is a significant environmental concern.

Given the low penetration rate of EVs in Selangor and nationwide, the government of Malaysia is planning to make significant investments to advance carbon neutrality. This investment aims to reduce CO2 emissions and promote the use of EV as a more sustainable mode of transportation. Carbon neutrality is a crucial goal not only for Selangor but also for the country as a whole, and the government is taking steps to achieve the goal by implementing policies and strategies that encourage the use of cleaner forms of energy and transportation.

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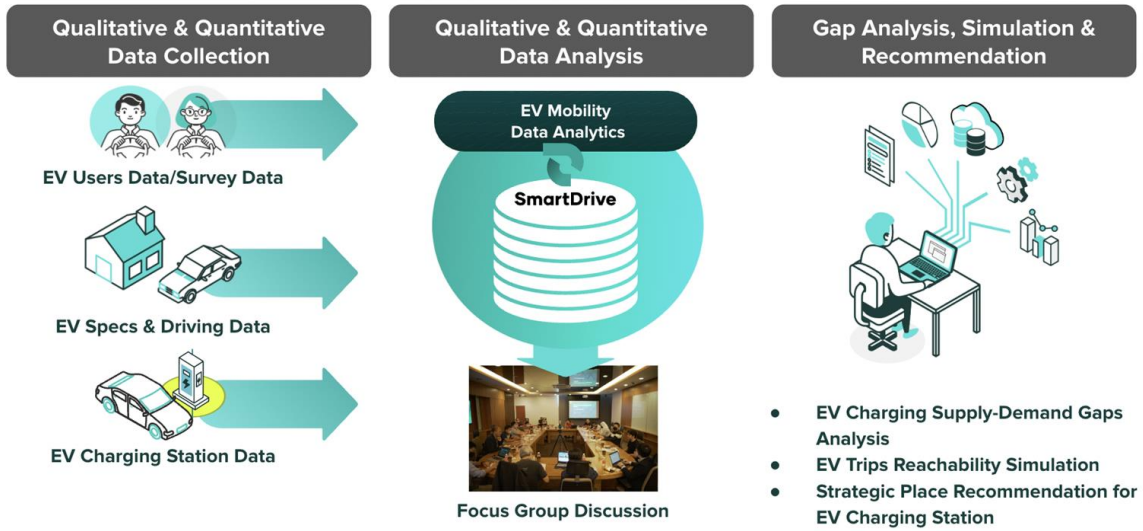
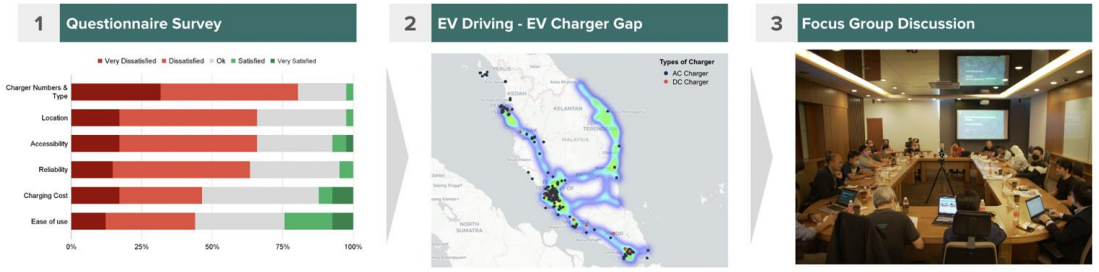
Details of Demonstration

We utilized both qualitative methods, such as questionnaire surveys and focus group discussions with EV users, as well as quantitative methods, such as EV driving data analysis. With the help of EV users, we were able to collect real life driving data that covers not only the state of Selangor but also the whole of Malaysia. By analyzing this data, we identified gaps between the current EV charging infrastructure and EV users' demand for charging facilities. We also conducted simulations to evaluate trip reachability and identify strategic locations for the installation of new EV charging stations to close the gap.



Project outcome / Future plans

Based on analysis of real life driving data, the current availability of EV charging infrastructure does not match EV users' need for it. There are substantial areas, for example, on the east side of the Malay Peninsula, where such gaps exist. We did not expect EV users to make long-distance trips to these areas from Selangor due to range anxiety but discovered that there is substantial need for EV charging infrastructure, hence the potential to spread the use of EVs.



By using simulations, we identified strategic locations to install new EV charging stations to improve inter-state trip reachability, as a first step towards enhancing the overall EV user experience in Malaysia.