The Sharing Economy for the Electricity Grid in Connected Communities

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Project Description

Problem:

Can we use a Sharing Economy model to exploit underutilize resources in the grid?

Research Questions:

What physical infrastructure is needed?
Power electronics, comm, sensing, actuation

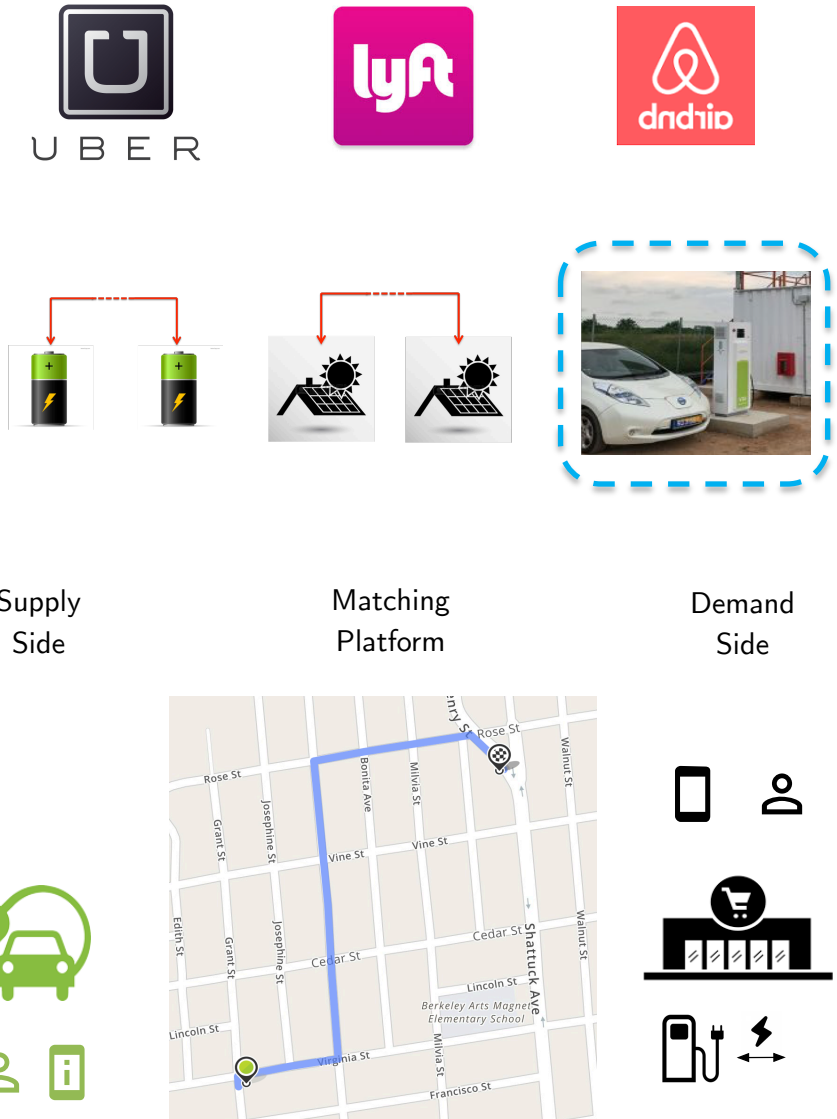
What cyber infrastucture is needed?
Blockchain, matching buyers/sellers

Under various sharing models, how will agents invest? Who benefits?

Manage the networked flow of data, power, and money

Transition-to-Practice Activities:

Sharing EV batteries for demand charge reduction



Findings

- Peaks of different users are temporally dispersed
- Power capacity of AC L2 bidirectional charger is sufficient
- Demand charge reduction covers the charger costs
- Drivers' per-service compensation is comparable to Uber hourly salary
- Piggybacking on electrified TNCs creates synergetic value