AG1815 Thematic Seminar II

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Buildings

Most homes and corporate offices are heated in perpetuity, even at times when nobody occupies them, meaning energy is wasted x amount of hours a day. Decreasing waste from human settlements relates to the UNs SDG no. 11 (Make cities and human settlements inclusive, safe, resilient and sustainable).

In the US, the thermostat is responsible for approximately half of each households energy bill [4]. By adopting a self-learning thermostat, energy usage throughout the day is decreased, which enables level two optimization effects according to Lorenz Hilty. Due to the thermostats data-gathering nature, the question of ethical data gathering arises, i.e what can the device record, where could it send it. As an example, burglars might get a hold of the data in order to be able to determine when offices or homes are empty.

Level 1, Life cycle impacts: The thermostat requires more advanced hardware than conventional thermostats, parts that might be more difficult to dispose of. Additionally, they have a somewhat lower life-cycle.

Food

According to UNEP, approximately one third of the global annual food supply is wasted, or 1.3 billion tonnes [1]. Decreasing said food waste is a part of the UNs SDG no. 12 (Sustainable Consumption). This is partly due to agricultural enterprises throwing out "undesirable" food items, e.g those with with deformed appearances and discolouring. The other factor mainly lies within restaurants throwing out food they were unable to sell.

Long have there been ways to save food wastage by donating food, Karma however is first with creating a user-friendly food saving implementation[2], where the consumer seeks out the restaurant in question. Any food that has not been sold for the day is simply discounted and advertised on the karma app. Any willing customer can then pay beforehand and seek out the restaurant to pick up any unsold food.

Level 1: The software development part of the Karma application has an immediate impact on how much energy mobile devices would waste on it. Careful selection of data structures and algorithms has a significant impact on how eco-friendly the app is.

Level 2: Induction effect, Karma stimulates the consumption of left over food for the purpose of reducing food wastage.

Level 3: The karma application encourages eco-friendly consumption habits. The app itself however, given a large enough following, can turn into an advertisement enterprise that promotes regular wasteful eating habits (through advertising of undiscounted food items). It might also prove to be socially unsustainable by literally taking food out of peoples mouths, as more restaurants might opt for offering discounted food instead of donating it.

Transport

The transportation system the author mainly focuses on is that of personal vehicles on roads. The most standard form of transport is one person driving a personal vehicle alone, although convenient and comfortable, it is a major contributor to greenhouse emissions. In 2019, greenhouse gas emissions from transportation accounted for about 29 percent of total U.S. greenhouse gas emissions, making it the largest contributor of U.S. greenhouse gas emissions[3]. Decreasing said emissions relates to UNs SDG no.13 (Action to combat climate change and its impacts).

Besides public transportation, a very effective way of reducing emissions are carpooling applications designed to match people with similar daily travel routes. Four individuals in one car is far more environmentally friendly than four individuals in four cars. This practice is also more socially sustainable than public transit, as passengers are at less risk of being subjected to crime (pickpocketing, mugging etc).

Level 1: As previously mentioned, application software has an immediate impact on how much future energy mobile devices would waste on it. Careful selection of databases, cloud networks and algorithms has a significant impact on the applications eco-friendliness.

Level 3, socio-economic effects: If mass adoption of carpooling apps would occur, it could spell trouble for public transport, i.e carpooling could outcompete a comparatively better alternative to personal vehicles. To rephrase what is stated above, four individuals in one car is better than four individuals in four cars. Thirty individuals in one bus however, trumps both alternatives.

References

[1] UNEP website: https://www.unep.org/thinkeatsave/get-informed/worldwide-food-waste

[2] Karma Website, About food wastage: https://staging.karma.life/sv/om-matsvinn

[3] Sources of Greenhouse Gas Emissions https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

[4] Saving energy starts with your thermostat: https://nest.com/thermostats/real-savings/