

# Value Sensitive Design

Events and Reactions Group: Jabili Kaza, Meaghan Kjelland, Jen Smith, Eli White, Kyle Zemek

## Direct Stakeholders

Since our project can be used by a very general group of people in many different ways, we chose to focus on a specific group of people who could use the application. We chose to look into single home owners who want to automate tasks in their homes. The direct stakeholders in this situation are the single homeowners, because they are the ones who are using the application. Additionally, other important direct stakeholders would include developers of modules and elderly. Developers would need to access the application to find what modules have already been developed and what they could potentially develop and elderly could benefit from automation of everyday tasks that they may need assistance doing or may forget to do.

## Indirect Stakeholders

There can be many indirect stakeholders who are affected by the single home owner's use of our application to automate their homes. Other systems for home automation could be rendered obsolete by the application, and the companies who make these systems would be affected by it. Energy companies could be affected because many people would save energy by using the application. It could also affect the neighbors of the direct stakeholders, who may be confused to see lights on or a TV turned on in a home when the homeowner is not home. Friends or visitors to the user would also be affected when visiting the home, since they may or may not be aware of the automated tasks the homeowner had previously set up. They can also be affected if anything in the system happens to go wrong while they are in the home.

## Harms

There are a few harms that can result from the use of the application and would need to be addressed. One big concern would be security. For example, if a hacker is able to break into the system, he or she may gain control over the entire home. Also, if the system is compromised without the home owner's knowledge, it could give the homeowner a false sense of security, or lead to confusion if the system no longer works correctly. Energy companies could lose money because homeowners could use the application to shut off appliances that aren't in use, or to turn off lights when they are not home. It could also take away jobs from the people who develop similar systems, since their specialized applications and knowledge would no longer be needed.

## Benefits

There are also many benefits of this application. The homeowners could automate many tasks that they couldn't before, even if they have no experience with home automation. This could allow the users to potentially use much less energy, which would have the dual benefit of saving on energy costs and natural resources. Users could be more comfortable in their homes (for example, by programming the system to turn on their heat 20 minutes before they get home). It saves the user time because they would no longer have to manually repeat all of these tasks

more than once. By giving users complete control over what their house does even when no one is home, this system allows users to create very unique and potentially very effective security systems. For example, it would be trivial to program different lights to come on and off at random intervals to give the appearance of someone moving around indoors. Generally, it gives the user more control over their homes with very little effort.

## Values

Some important values to consider are usability, autonomy, sustainability, providing suitable reactions or solutions, and money. The system would have to be very usable for all of the benefits to be achievable. It would also have to allow users do be very independent in their use of the application by providing them with solutions that would be suitable to their event. It can potentially increase sustainability by allowing users to save energy. It can save the users money, but may cost some companies money (like energy companies, or companies that make more specialized systems).

## Value Tensions

Some values that collide are the desire for the user to save money, and the desire for companies to make money. Users can save money on their energy bill, but the energy company will lose money because people are not using as much energy. This could lead to energy companies having less money to invest in finding more sustainable energy forms, which conflicts with the sustainability value. Autonomy and usability could also conflict with each other: for example, what happens if the system malfunctions? Would it be immediately apparent that something was wrong, and would it be easy for the homeowner to fix? The system would need to be autonomous enough to make using it worthwhile, but would also have to be usable enough to make it possible for the user to easily address problems as they occurred. Lastly, tension between usability and providing numerous suitable solutions or reactions might exist as it is necessary to provide solutions that suit each user, but also not overwhelm them with options. Finding a balance between the two or a way to suggest the best solutions will be essential.